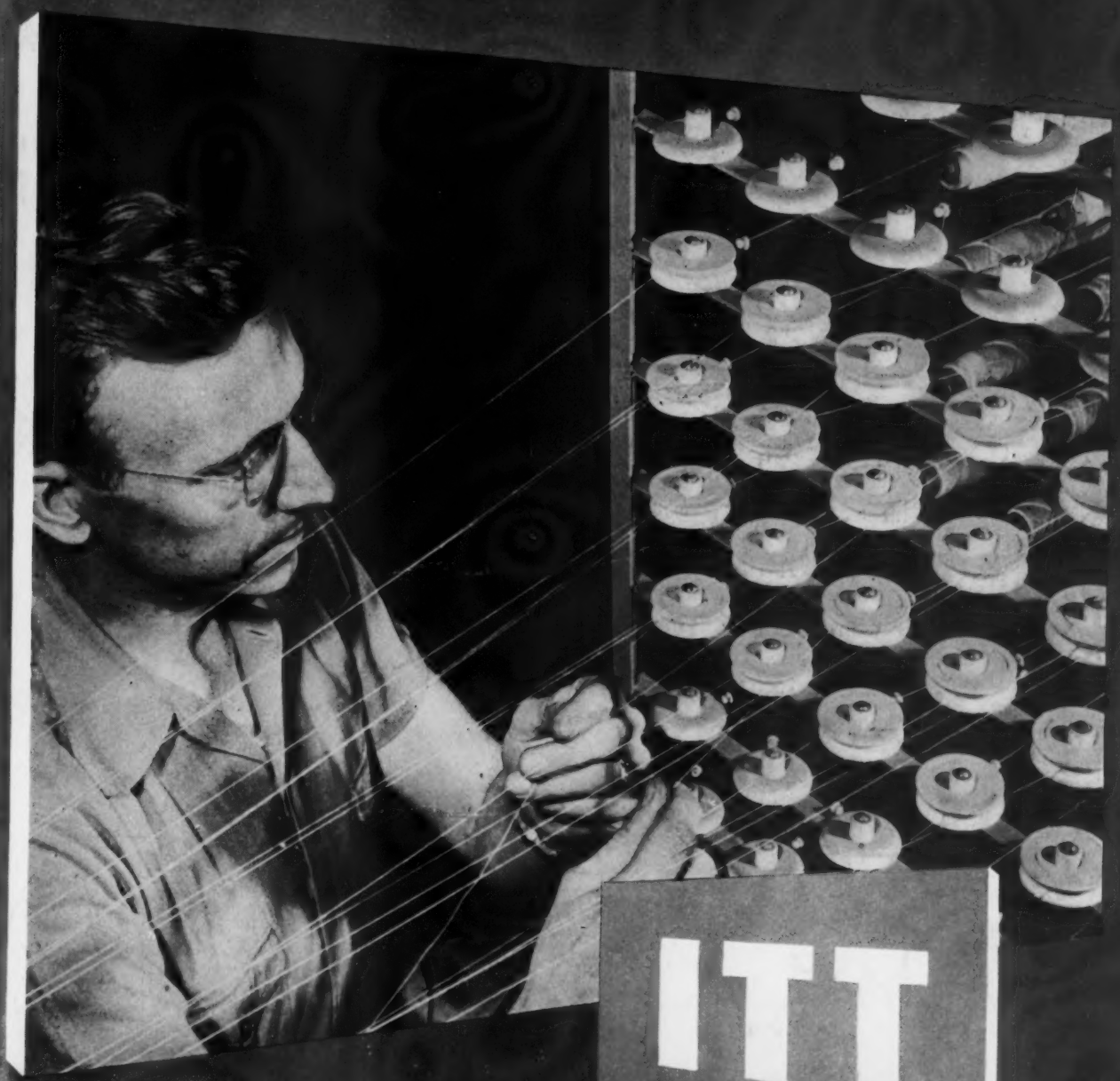
TECHNOLOGY DEPARTMENT

TEXTILE WORLD

A McGraw-Hill Publication ---------- JUNE • 1947



★ Institute of Textile Technology . . .

Combines DEGREE GRANTING with RESEARCH

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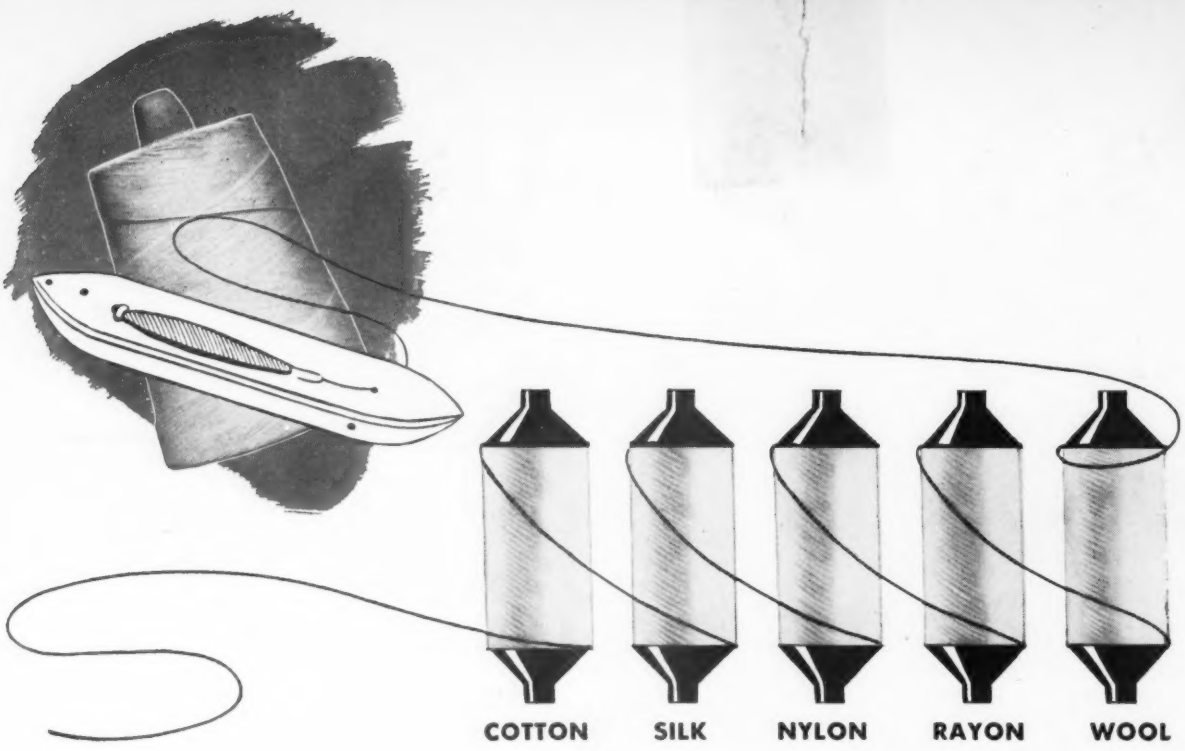

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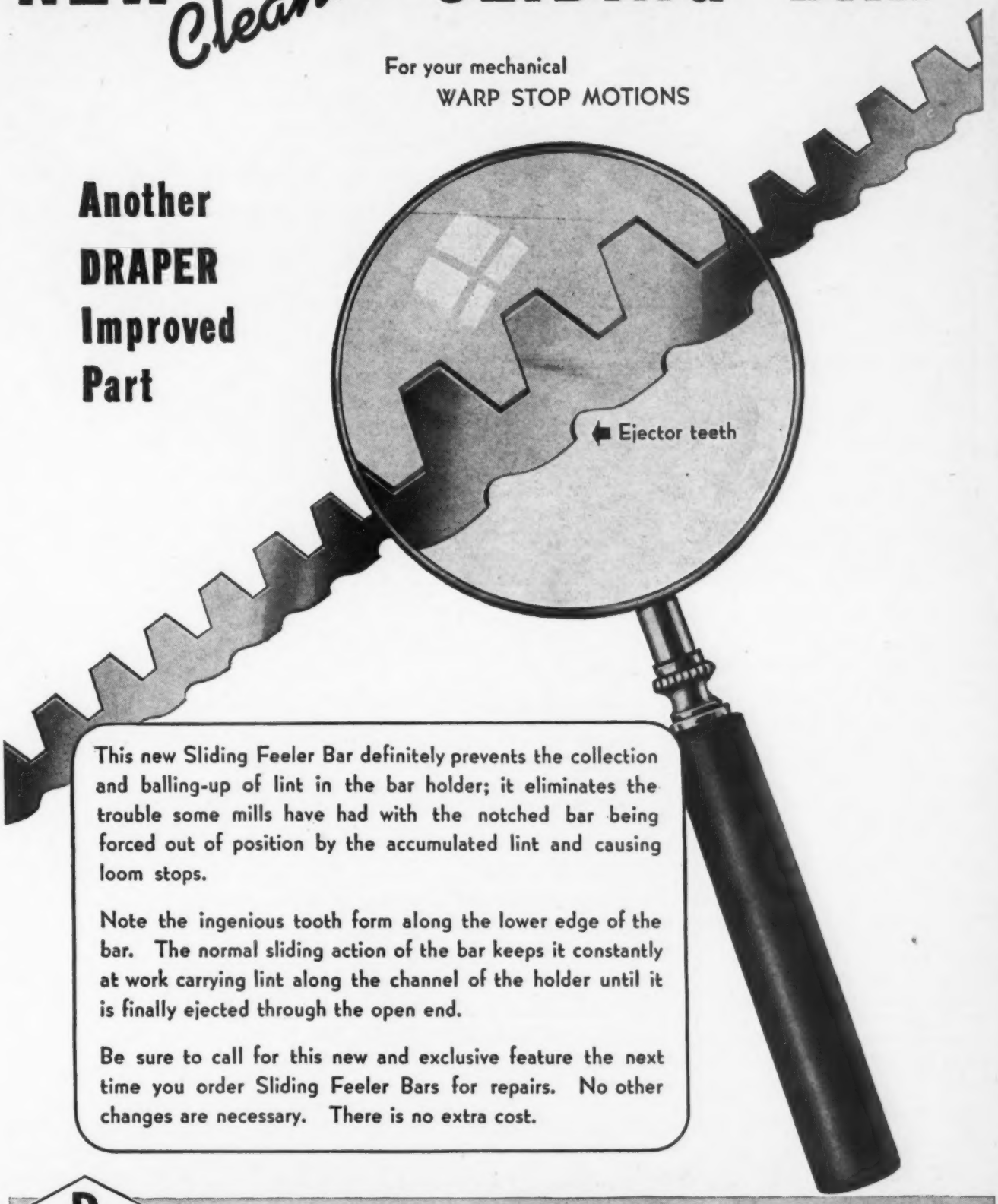

This new Sliding Feeler Bar definitely prevents the collection and balling-up of lint in the bar holder; it eliminates the trouble some mills have had with the notched bar being forced out of position by the accumulated lint and causing loom stops.

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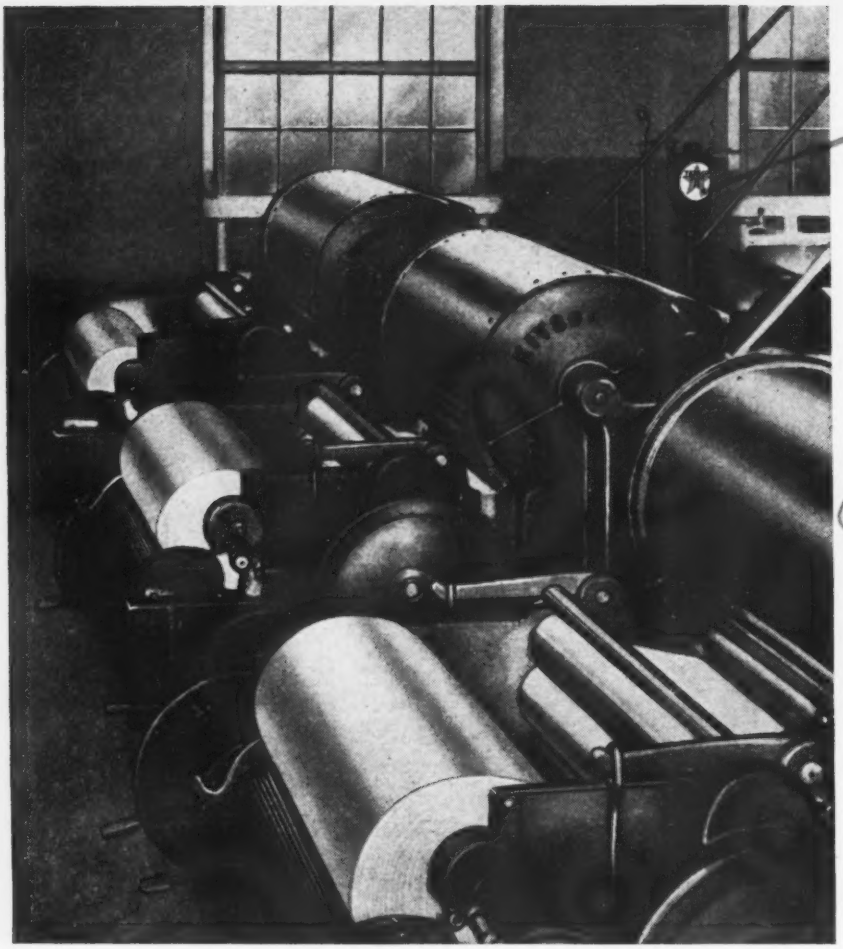

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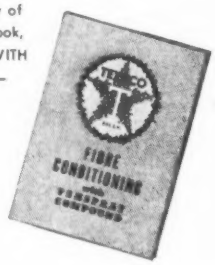

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TEXTILE WORLD

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A McGRAW - HILL PUBLICATION

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THE *Long-Range* VIEW

WANTED: TRAINED MEN

With the ever-increasing emphasis on technology, the need for trained men in textile plants is each year becoming more acute than before. Of course, the greatest source of such men is our textile schools. This statement does not imply that the products of textile schools are fully trained men ready to take over responsible positions in the industry—rather, such men are superior raw material from which better mill men can be developed.

Months before the 1946-47 school term expired, executives from mills and mill suppliers were calling upon the prospective textile-school graduates to arrange for hiring them upon graduation. It was not unusual for particularly promising men to have several offers to choose from, all at good starting salaries. The present "crop" of graduates is only 317, not nearly enough to go around. They are in greater demand than usual because many of them are veterans; and, as a whole, veterans have distinguished themselves by diligence in studies and maturity in viewpoint. Thus, the veteran-graduates are considered to be of superior quality.

This stress on quality, plus the increasing importance of technology, leads us to the main point of this editorial: What are we doing about the future needs of our industry for trained men?

The expansion and improvement programs of many of the textile schools are well known. What is not so well known is the dearth of good teaching personnel. The equipment, facilities, and programs of these institutions cannot be utilized satisfactorily without competent personnel.

Some mills have already recognized this problem and are helping to solve it in various ways. One is by funds for research foundations at textile schools. In this respect, we are beginning to do what has been common practice abroad. European textile schools, for example, are looked to for considerable leadership in textile developments—certainly to a larger degree than are textile schools in the United States. Textile teachers there are frequently among the most respected leaders of the industry. It seems reasonable that this is one way by which the quality of our textile-school personnel can be advanced.

Today the enrollment of our textile schools is three times greater than ten years ago; 2,700 students are to be found in full-time day courses, more than 2,000 are taking evening courses, and about 50 are doing graduate work. Teaching staffs have not been equal to the increase, with the result that teaching loads have been added to greatly and more student assistants than heretofore are being used.

At the recent National Conference of Textile School Deans, it was reported that the problem of securing new staff members was not one of compensation, although that is a factor; but that it was chiefly the difficulty of finding prospective professional teachers employed in industry and of acquainting them with the opportunities in textile-school teaching. While the deans recognize that salaries for like abilities are lower in teaching than in industry on an annual basis, the hourly rate is high; and in their spare time, men of capacity are free to find additional compensation in research and consultation. Teachers have the opportunity of self-development and of becoming recognized specialists in fields of their choosing. Teaching is a relatively stable vocation and offers considerable freedom to the individual.

The need for textile-school teachers is greater than most mill men realize. For example, one school alone could use eleven additional staff members. There are numerous ways in which mills can assist textile schools in obtaining necessary personnel. The most direct would be to recommend to the schools men they believe would be qualified as instructors. Mill executives and other textile groups, such as associations, could, if they wished, route more of their research to textile schools even to the extent of sending staffs that might teach part time in the lines in which they are qualified and work on research part time. This dual arrangement has considerable merit as can be seen in the lead story of this issue of TEXTILE WORLD, the story of the Institute of Textile Technology at Charlottesville.

Whatever mills can do to assist textile schools will, directly or indirectly, revert back to them through an improvement in the industry.

Why not get in touch with your favorite textile-school dean to see what you can do to be of help in this important matter?

C. H. Bendigo

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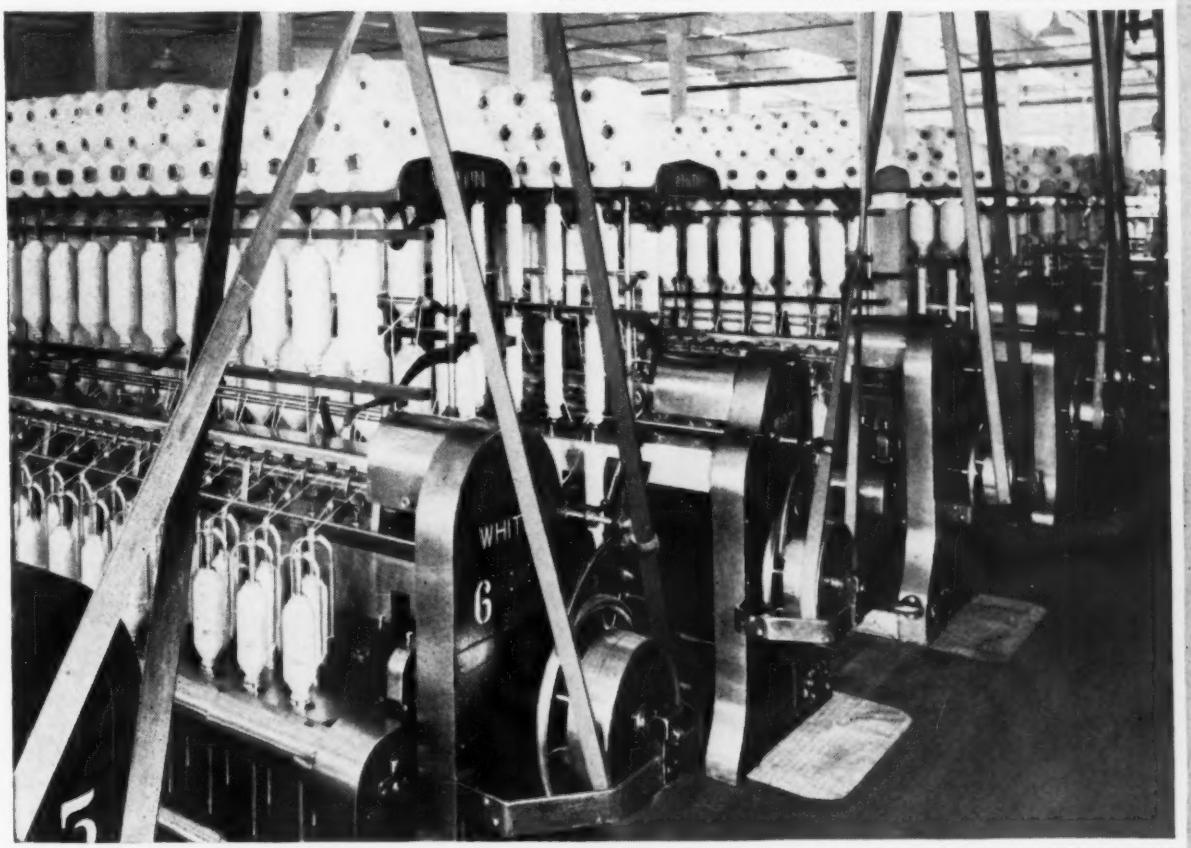

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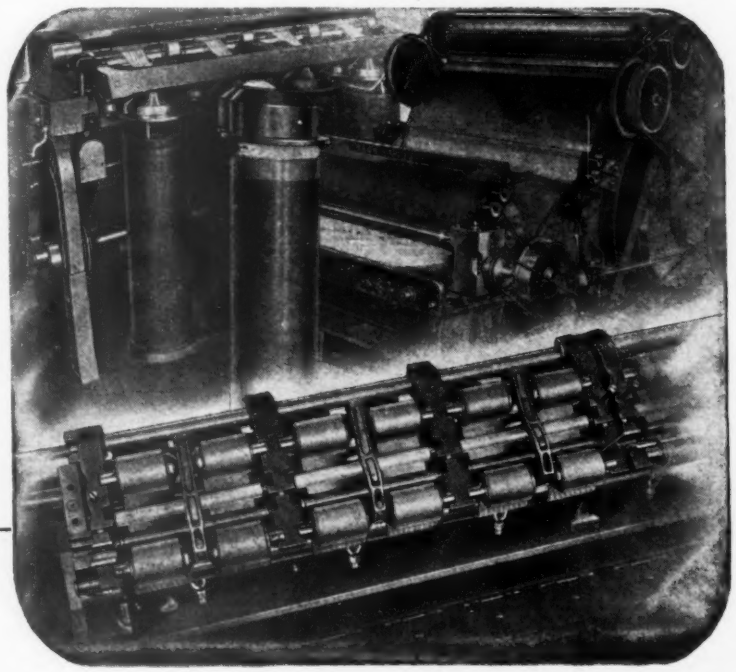

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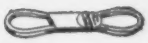

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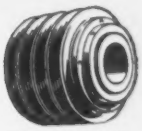

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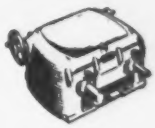

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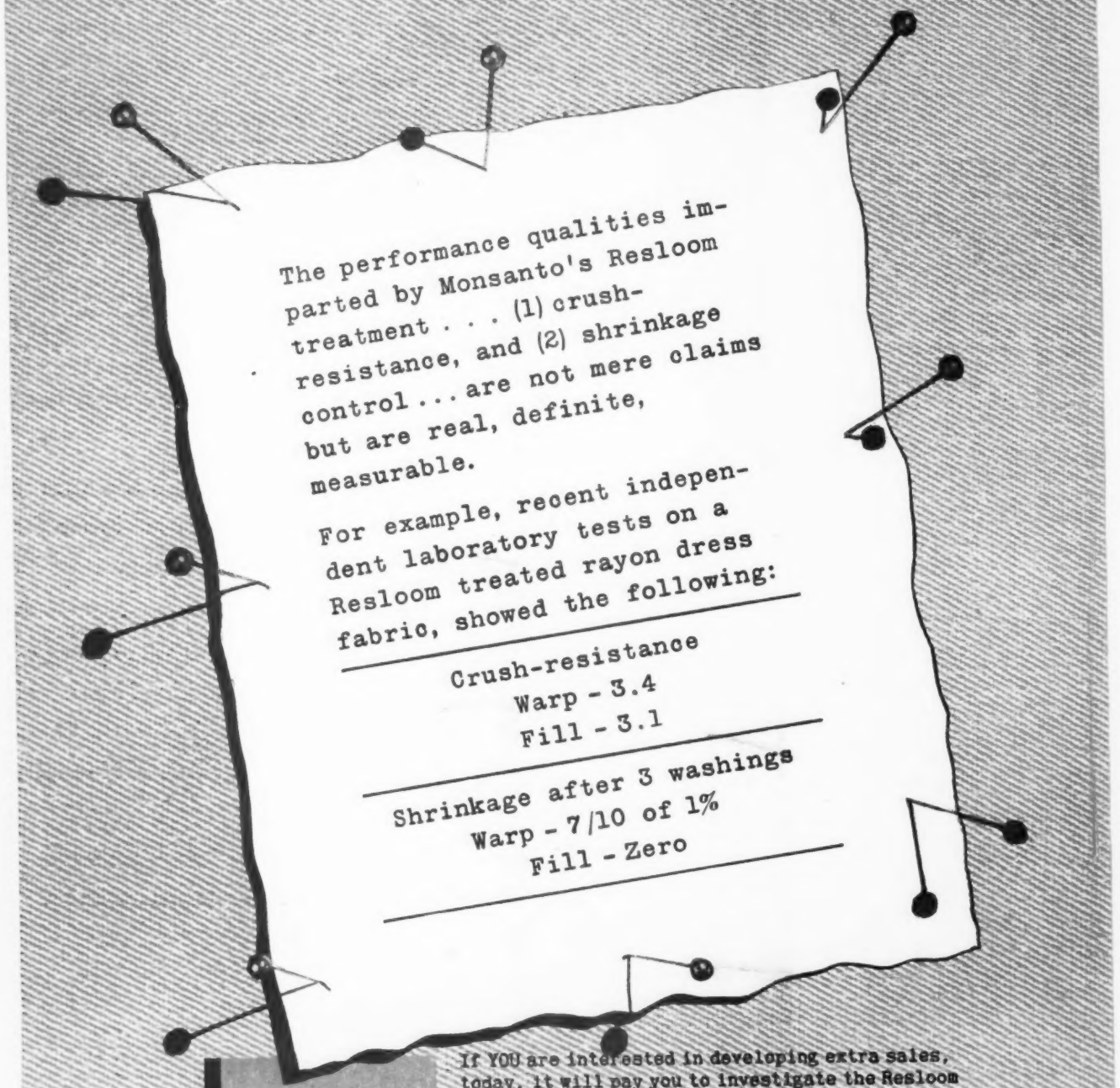

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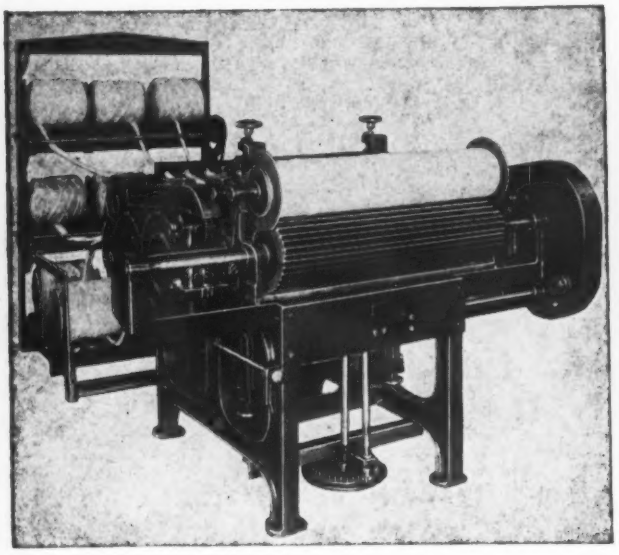
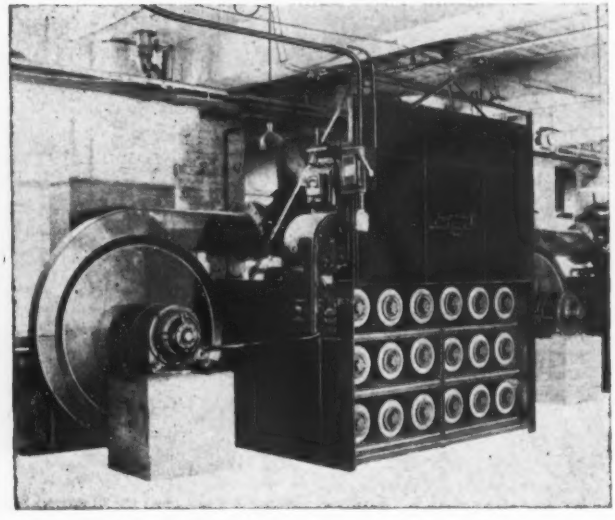
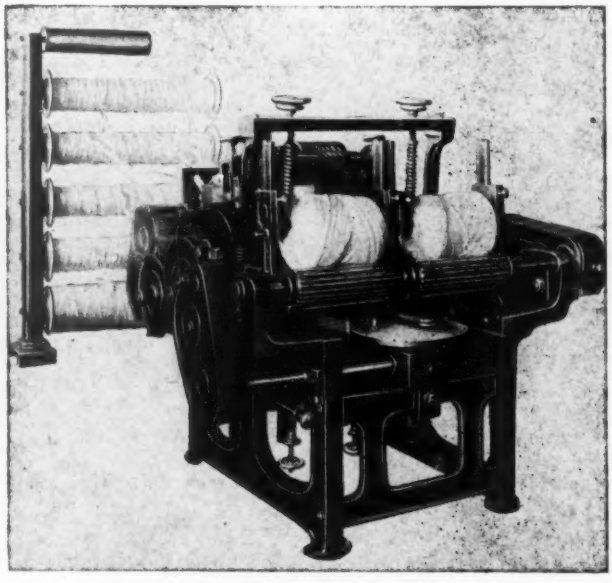


(1) Abbott Dye Spools Wound from Top on Special Spooling Gill

(2) Then, Dyed in Abbott Stainless Steel Dye Kettles



(3) and Dried in Abbott 18-spool Dryer



(4) Then, wound from Dye Spools on the Finishing Gill

No Backwashing or Recombing Required

ABBOTT MACHINE COMPANY
WILTON, NEW HAMPSHIRE
U. S. A.

the time is SHORTER than you think!

MAKE YOUR PLANS *NOW* TO ATTEND

Manufacturers from all over the U.S.A. have assured us of the *Largest Exhibition of Textile Machinery* ever shown under one roof:

"THEY SAY"

"Our Textile Machinery Industry will establish its title to world supremacy at the Show in New York."

"There's only one New York! We'll be there with everything we've got!!"

"In the whole wide world, there is no other place like New York for our Exposition on a really international scale."

"We're with you 100%—it's about time the Show was held in New York".

"You are making a great contribution to our industries in staging such an Exposition in New York".

"As far as our company is concerned, we will be pleased to exhibit in your forthcoming exposition."

THE PLACE

The Exposition will be held in the great Kingsbridge Armory—185,000 square feet—all on one floor—no columns—largest open floor in the country.

Only 22 minutes from Times Square.

ACCOMMODATIONS

Ample parking facilities — Fine Restaurants close by — Hotel rooms will be made available for the thousands of visitors from all over the world, through the cooperation of the New York Hotel Association and New York's Convention Bureau.

SALES LEADS

To assure maximum business for participating manufacturers, strict policy of registration will be observed, and lists of registrants will be prepared for exclusive use of exhibitors. The general public and "curiosity" seekers will be excluded.

WHETHER YOU PLAN TO EXHIBIT YOUR PRODUCTS OR TO VISIT THE SHOW

GET THE DETAILS

APRIL by writing **26-7-8-9-30**

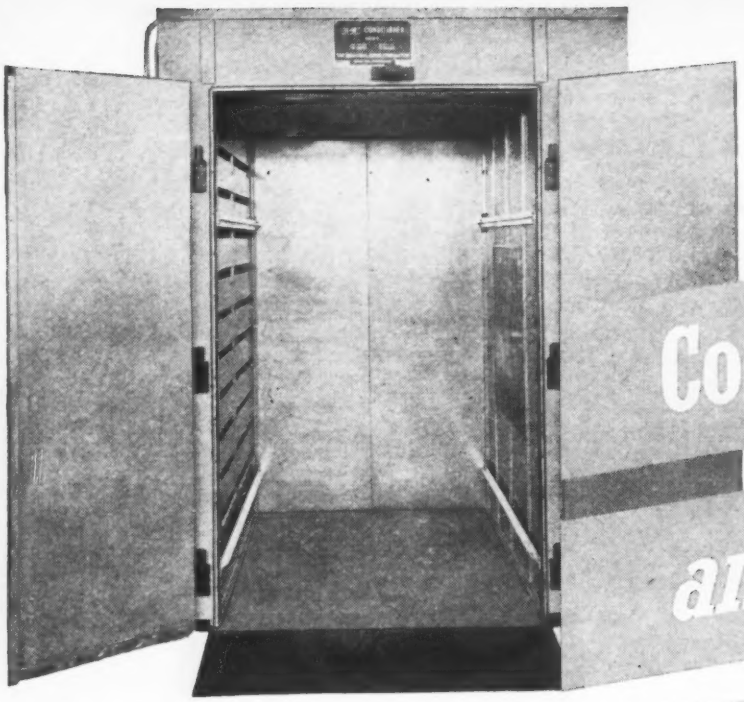
INTERNATIONAL EXPOSITION OF TEXTILE MACHINERY, EQUIPMENT & SUPPLIES

1948

Under Management of EXHIBITIONS OF FASHIONS, INC.
BANK REF., MFRS. TRUST CO., 530 7th Ave., N. Y., N. Y.

EXECUTIVE OFFICE

36 WEST 47TH STREET **NEW YORK 19, N. Y.**



Corrosion-Wise and Cost-Wise Stainless-Clad Steels save money

Both cost *and* corrosion were conquered in the design of this H-W Yarn Conditioner, fabricated by The Industrial Dryer Corporation, Stamford, Connecticut. A Lukens Clad Steel was used for the floor plate to prevent corrosion and contamination from wheels of trucks, used to place yarn in the conditioner.

For *any* textile machinery and equipment requiring stainless plate construction, you can now hold down first cost and future costs by specifying Lukens Stainless-Clad Steel. Materials are protected from contamination or discoloration by durable, easy-to-clean stainless, permanently bonded in a uniform thickness, to lower-cost steel.

The stainless can be of any standard specification, clad in any proportion of total plate thickness, from 5 to 50 per cent. Backing plate can be any quality carbon or low alloy steel.

Lukens Stainless-Clad Steels are furnished in plates from $\frac{3}{16}$″ to over 3″ thick, or in widths up to 178″. Heads of all styles and sizes can be furnished to over 18′ in diameter. There are no unusual fabrication problems.

Further information on Lukens Stainless-Clad Steels is contained in Bulletin 338; on Lukens Nickel-Clad, Inconel-Clad and Monel-Clad Steels in Bulletin 255. Please write for copies. Lukens Steel Company, 406 Lukens Building, Coatesville, Pennsylvania.

LUKENS
Nickel-Clad Stainless-Clad
Inconel-Clad Monel-Clad
STEELS
★

SOLID METAL ADVANTAGES WITH CLAD-STEEL ECONOMY

HIGH YARN STRENGTH

LOW PRODUCTION COSTS

S/V WOOLREX OILS give long card runs, reduce "ends down," scour out easily

FROM CARDING through to the final scouring, you get important advantages when you lubricate your wool stock with S/V Woolrex Oils.

These famous oils are outstanding for their rapid penetration and spreading qualities. This means uniformly conditioned and lubricated stock, minimum fiber breakage in carding, longer fibers and increased yarn strength. Freedom from gum-forming tendencies assures long card runs before stripping. High yarn strength means less "ends down" in spinning. All these mean savings in production costs.

Finally, with the correct grade of S/V Woolrex Oil on your stock, you can scour your cloth with minimum amounts of soap. No special detergents are required. The amount of soap normally used in fulling is sufficient to insure satisfactory scouring.

You'll find that S/V Woolrex Oils mean greater savings, increased production all along the line—factors that add up to increased profits. Get details from your Socony-Vacuum Representative.

SOCONY-VACUUM OIL CO., INC., 26 B'way, New York 4, N. Y., and Affiliates: Magnolia Petroleum Co., General Petroleum Corp.

Better Processing for ALL Textiles

Woolens . . . S/V Woolrex Oils improve carding and spinning. Scour out easily.

Worsteds . . . S/V Worstex Oils lubricate stock uniformly. Improve spinning.

Water Repellents . . . S/V Products give maximum repellency with minimum amounts.

Finishing . . . S/V Finishing Oils give excellent wetting, re-wetting and softening effects.

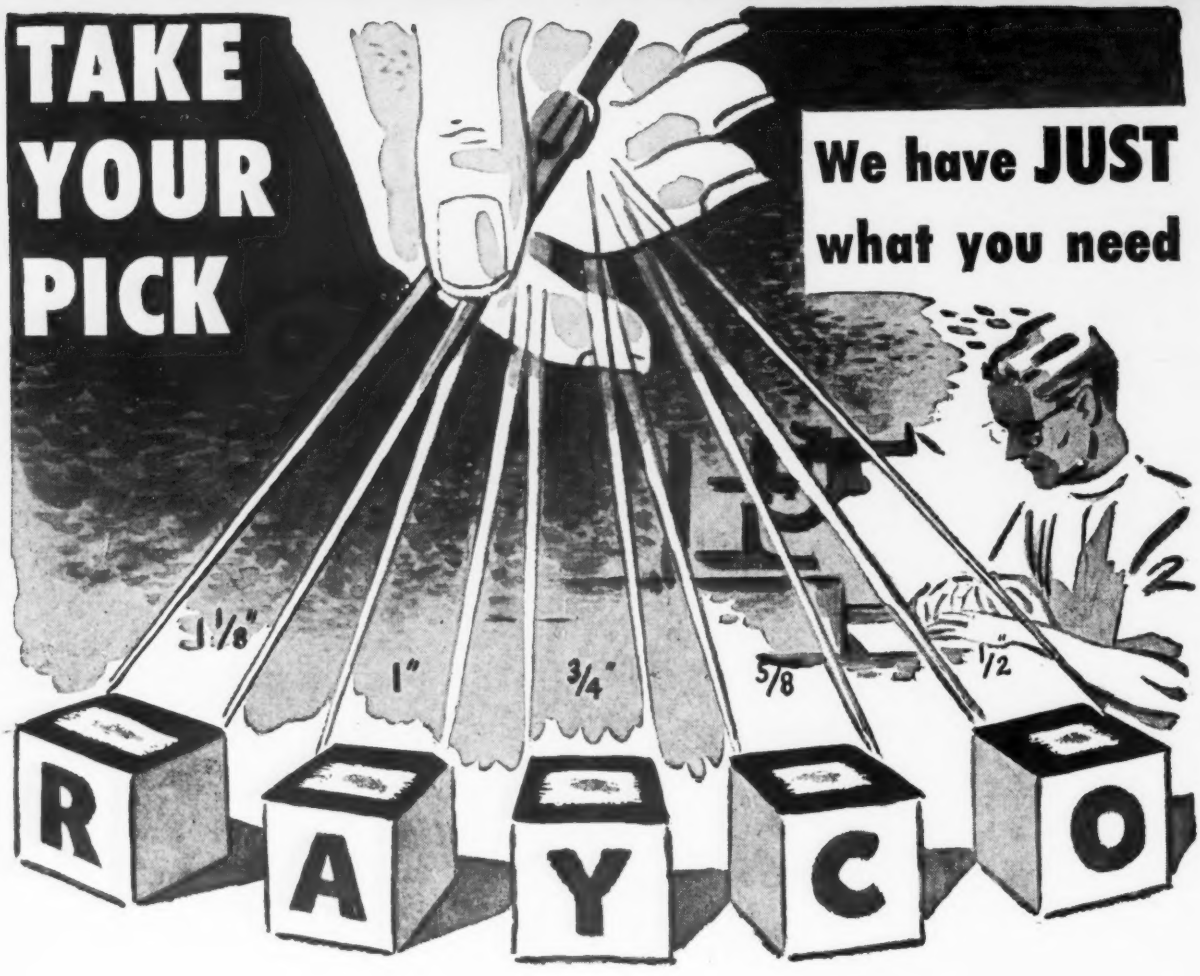
Shrinkage Process . . . S/V Finishing Oils insure quick, uniform re-wetting.

Rayon Processing . . . S/V Rayon Oils add softness to rayon fibers.

Process Products

Socony-Vacuum Process Products

TUNE IN THE MOBILGAS PROGRAM — MONDAY EVENINGS, 9:30 E.D.T. — NBC



SPECIFY THE FIBER or fiber blends to best suit the requirements of your particular process and equipment. We will deliver the right material to do the best job. Through careful classification at the source of supply —both in our own and our contracted mills —we are able to offer the exact degree of staple length, color, strength, percentage of foreign matter, resiliency and drag you want.

We can supply you with cotton; cotton and rayon blends; cotton, rayon and aralac blends and assorted rayon scraps. These are available in comber noils, card strips, spinners and rovings (machined and unmachined), colored card strips, soiled cards and woven cuttings.

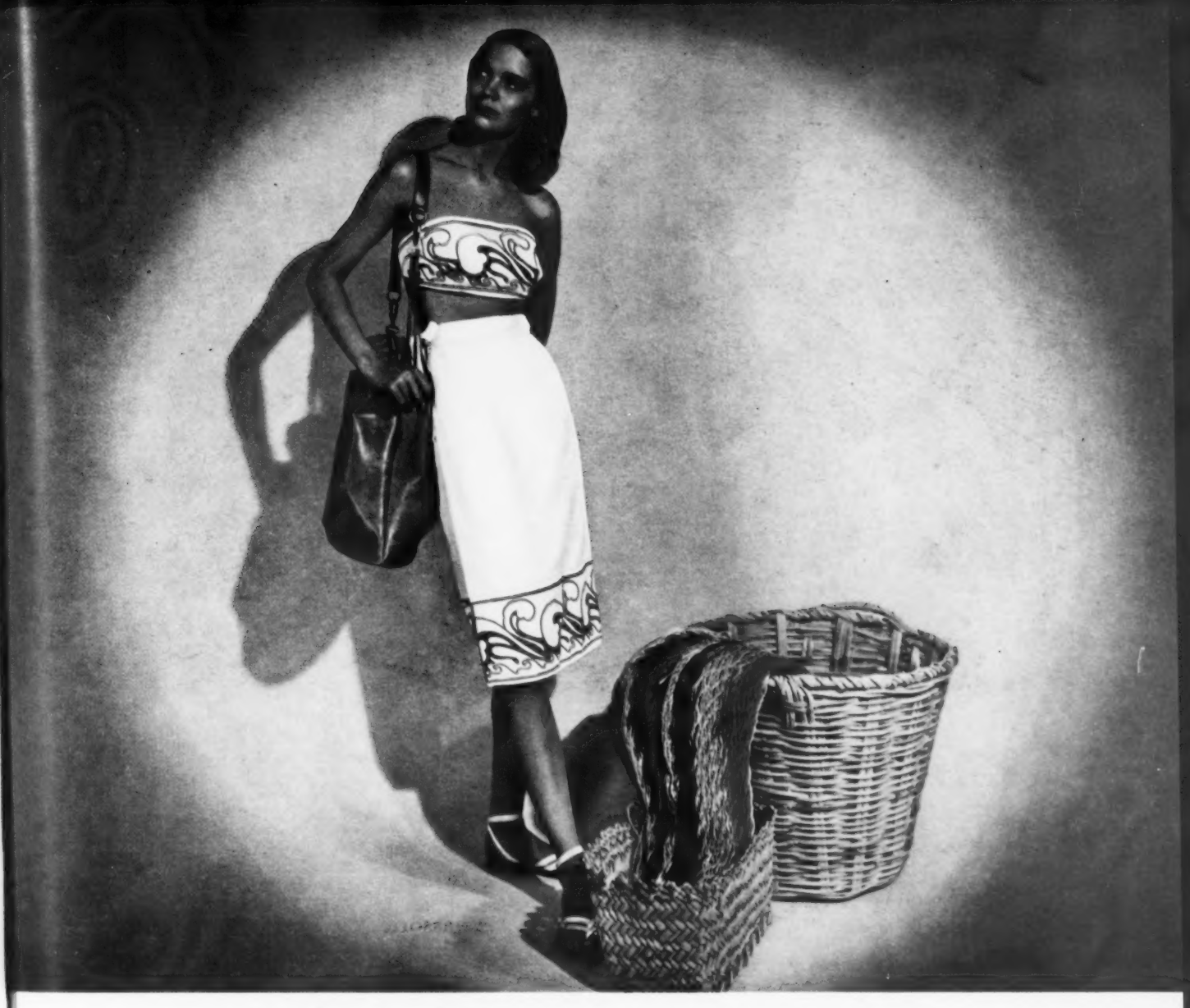
Get in touch with us, let us know what you require and we will see that you get it.

The RAILWAY SUPPLY & MFG. CO. and Affiliates
Specialists in Grading, Marketing and Processing Cotton and Synthetic Fibers
General Offices: Cincinnati, Ohio

Plants and Sales Offices: Cincinnati, Ohio • Franklin, Ohio • Atlanta, Ga. • Charlotte, N. C. • Covington, Tenn. • Greensboro, N. C. • Memphis, Tenn. • New York, N. Y. • Chicago, Ill. • Detroit, Mich.

RAYCO **COTTON & SYNTHETIC FIBERS**

SANDOZ PRESENTS *the color achievement of the month*



Carte Blanche BY JANTZEN

Jantzen adds stark white flattery to golden sun-tan beauty with this novelty weave sharkskin ensemble. The cleverly designed skirt covers matching shorts which may be worn in the water.

This famous beachwear manufacturer includes Sandoz among its suppliers because it can depend upon Sandoz colors for fastness to seashore sun and salt water wear. In addition, Sandoz dyes and chemicals offer efficiencies in the dyeing operation that result from technical improvements introduced by Sandoz research chemists.

Among Sandoz colors that are ideal for such purposes as bathing suits, by virtue of their brightness and fastness to light, salt water, perspiration and washing, are the Brilliant Alizarine colors—Light Violet FFR, Sky Blue BS, Light Red 4B and the Milling Blues BL, G, 2RL and SL. An outstanding new yellow is Xylene Milling Yellow 3GL.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you have been seeing in these Sandoz advertisements. Sandoz application laboratories are located in New York, Boston, Philadelphia, Charlotte, Los Angeles, Toronto, where stocks in wide range are carried. Other branches are in Chicago, Paterson and Providence.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

SANDOZ *thinks ahead with textiles*

SANDOZ

Who Winds Cotton Yarn On Roto-Coners*?

More than 400 mills . . . including those which set the standards for quality. And more cotton spinners are replacing old equipment with Roto-Coners* than any other machine.

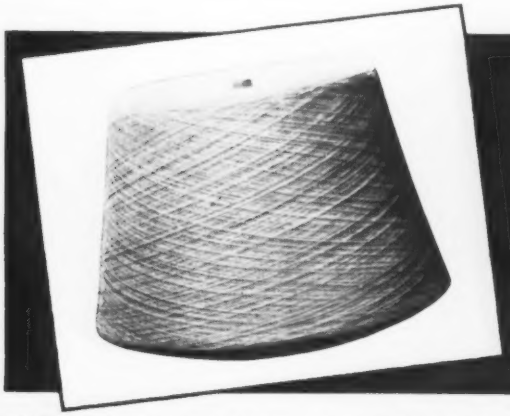
It's the exclusive Rotary Traverse that gives the Roto-Coner* winding machine highest productivity, lowest operating cost and lowest maintenance cost . . . and gives the winding package superior delivery characteristics, proper density, perfect appearance.

- One standard traversing device for any one class of work
- Easily convertible from coning to tubing
- One high winding speed for all yarn sizes
- No cams or other fast-wearing parts
- Uniform yarn inspection
- Packages free from roll cuts and underwinds

For lowest cost of manufacturing and maximum assurance of satisfactory results in subsequent operations . . . wind cotton yarns (also wool, worsted, spun rayon) on the machine that revolutionized drum winding. Write for Bulletin 144.

UNIVERSAL WINDING COMPANY
Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles, Montreal, Hamilton

*Reg. U. S. Pat. Off.



ROTO-CONER* LEESONA REG. U. S. PAT. OFF.

Open-Wind Cones for Knitting

WARPING CONES • DYEING PACKAGES • PARALLEL TUBES FOR TWISTING

ECONOMICAL • Armstrong's Cork Cots cost less, cut assembly time, have long life

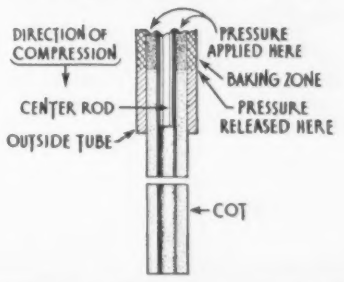
You make three big savings when you install Armstrong's Cork Cots on your spinning and roving frames. (1) These widely used coverings are low in first cost. (2) They reduce assembly time as much as 50%. (3) They have a long service life.

The extra "grip" of Armstrong's Cork Cots gives you more uniform yarn. Their extra friction also carries waste well back onto the clearer boards—so no eyebrowing occurs. Thus there's no danger of waste dropping off or being nipped into the yarn.

The extra resilience of Armstrong's Cork Cots provides quick recovery from most laps and hard ends. And because these cots are extruded, they have no hard or soft spots to grip the yarn unevenly. They retain these spinning advantages throughout a long initial service life. In addition, they can be rebuffed for three or four additional full length service lives.

Ask your Armstrong representative for samples, prices, and full information on Armstrong's Cork Cots. Or write today to Armstrong Cork Company, Textile Products Department, 8306 Arch Street, Lancaster, Pennsylvania.

EXTRUSION PROCESS PRODUCES SEAMLESS CORK COTS



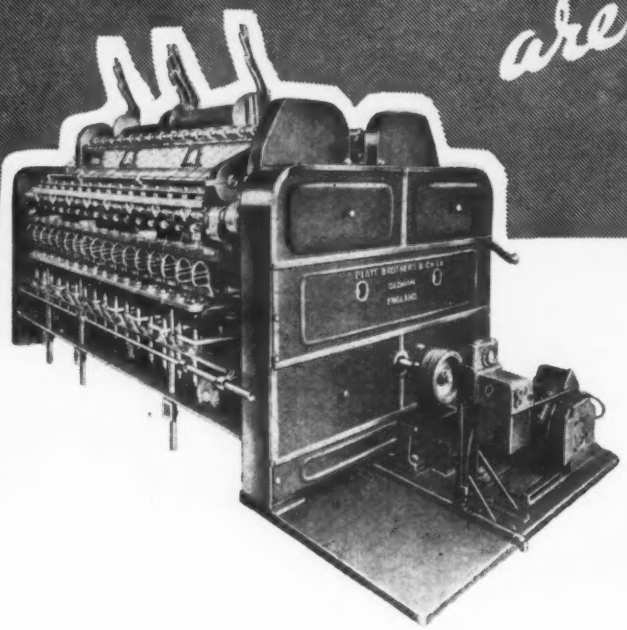
Armstrong's Cork Cots have no structural weakness to cause premature breakdown. Each cot is uniform in density from inside to outside, from end to end. Each compresses evenly, spins stronger yarn, lasts longer.

Better running work . . . more poundage

ARMSTRONG'S CORK COTS

ACCOTEX COTS • ACCOTEX APRONS

PLATT'S *are Unique!*



in offering

COMPLETE RANGES
of
MODERN MACHINERY
for the manufacture of

WOOLEN YARNS

by the

CONTINENTAL, ENGLISH SCOTCH, AND AMERICAN SYSTEMS

There is an up-to-date machine available for every purpose throughout the scouring, drying, blending, preparing, carding, combing, spinning and doubling processes.

NEW PATTERN

RING SPINNING FRAME
FOR WOOLEN YARNS

The advantages accruing exemplify the new pattern Ring Frame.

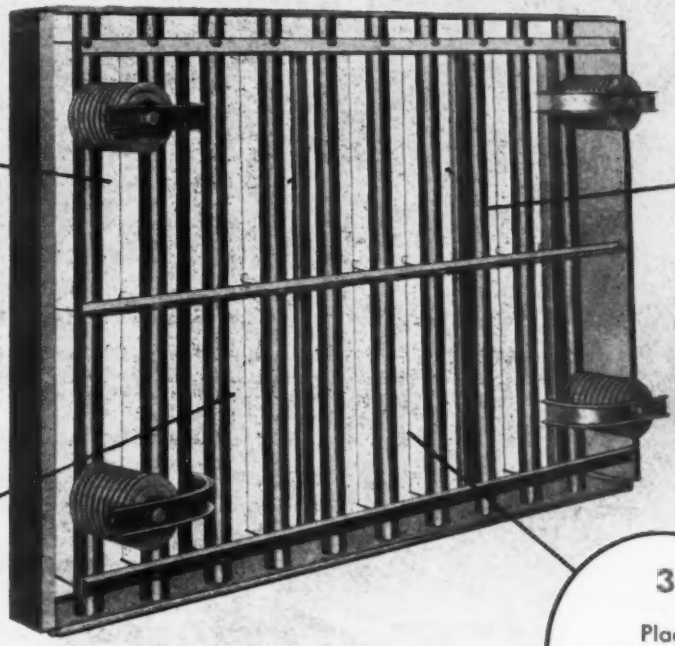
- ★ 1 Continuous spinning for all grades of wool, kindred fibres and their mixtures for full warp or weft yarns.
- ★ 2 High production from minimum floor space.
- ★ 3 Low labor costs.
- ★ 4 Large packages and fewer doffings.
- ★ 5 Mechanical simplicity.

PLATTS ARE SPECIALISTS IN THE MANUFACTURE OF **AXMINSTER CARPET LOOMS** OF ALL WIDTHS, OF THE DOUBLE NEEDLE, SINGLE INSERTION SPLIT SHOT TYPE.

PLATT BROTHERS SALES LTD.
OLDHAM — ENGLAND

NOTES ON *Electronic Air Cleaning* EQUIPMENT . . . No. 3

Ionizer Design notes . . .



1 Aircraft Structural Technique

2 Separate Ionizer for each Collector

3 Place independently of Collector

4 Keep Ionizer Wires Short

The most important single element in electronic precipitation equipment is the ionizer section. Designed to ionize airborne dust, smoke, soot, pollens, bacteria, it must work right, stay on the job, be easy to fix.

Hence these RAYTHEON rules:

Utilize aircraft structural techniques to combine strength and rigidity with light weight. Avoid possibility of major disruption by providing a *separate ionizer* for each collector cell. Arrange for each ionizer to slide into framework independently of collector. Keep ionizer wires *short* and thus less likely to break, more easy to restring.

Bulletin DL-P-503 gives detailed information. How many copies would you like?

RAYTHEON

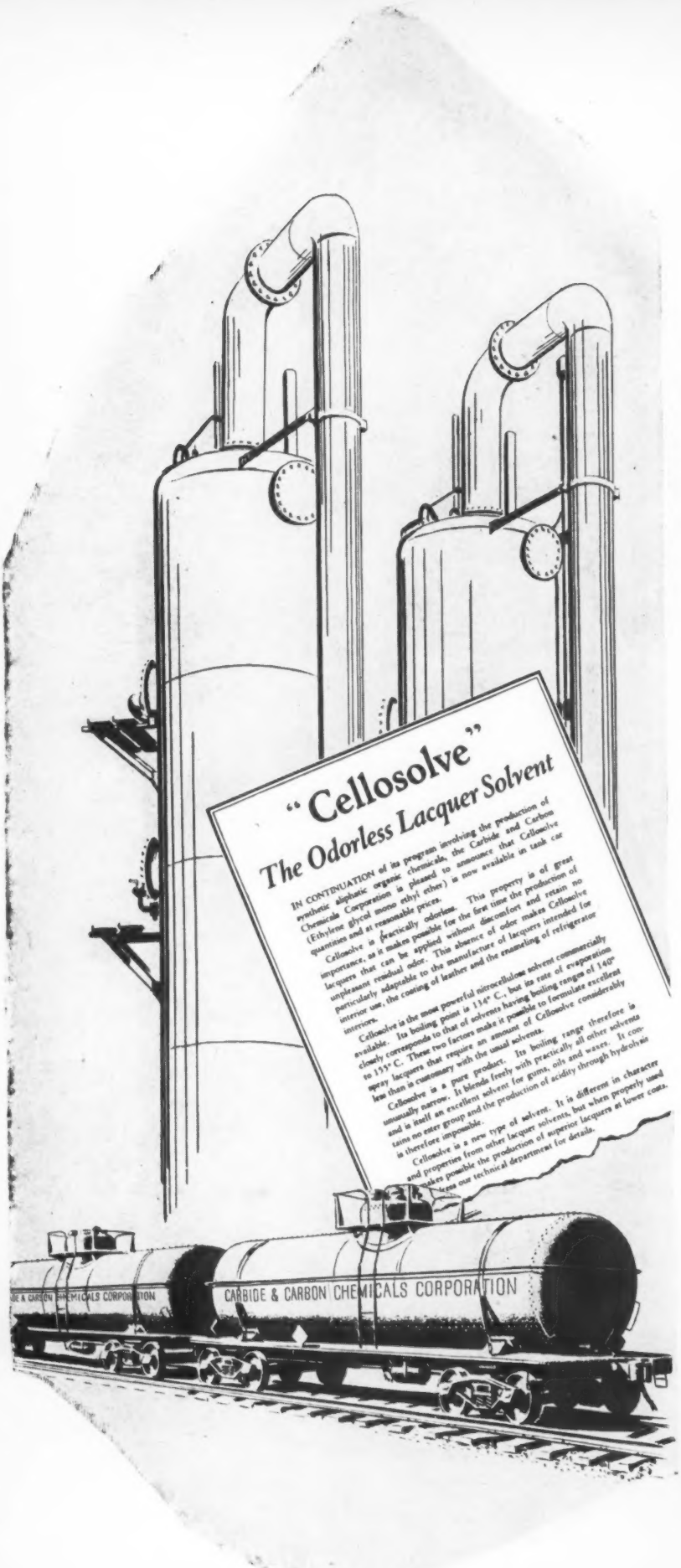
Excellence in Electronics

RAYTHEON MANUFACTURING COMPANY

Industrial Electronics Division, Waltham 54, Massachusetts

Builders of Raytherm Dielectric Heaters for every industrial application. Synchronous Controls for Resistance Welding and other Electronic Products for Industry

Sales Offices: Atlanta, Boston, Chicago, Cleveland, Louisville, New York


"Cellosolve"
The Odorless Lacquer Solvent
IN CONTINUATION of its program involving the production of synthetic aliphatic organic chemicals, the Carbide and Carbon Chemicals Corporation is pleased to announce that Cellosolve (Ethylene glycol mono ethyl ether) is now available in tank car quantities and at reasonable prices.
Cellosolve, as it makes possible for the first time the production of lacquers that can be applied without discomfort and retain no unpleasant residual odor. This absence of odor makes Cellosolve particularly adaptable to the manufacture of lacquers intended for interior use, the coating of leather and the enameling of refrigerator interiors.
Cellosolve is the most powerful nitrocellulose solvent commercially available. Its boiling point is 134° C., but its rate of evaporation closely corresponds to that of solvents having boiling ranges of 140° to 153° C. These two factors make it possible to formulate excellent spray lacquers that require an amount of Cellosolve considerably less than is customary with the usual solvents.
Cellosolve is a pure product. Its boiling range therefore is unusually narrow. It blends freely with practically all other solvents and is itself an excellent solvent for gums, oils and waxes. It contains no ester group and the production of acidity through hydrolysis is therefore impossible.
Cellosolve is a new type of solvent. It is different in character and properties from other lacquer solvents, but when properly used makes possible the production of superior lacquers at lower costs. Write our technical department for details.
CARBIDE & CARBON CHEMICALS CORPORATION

"Cellosolve"—

20 years later

"Cellosolve" Solvent was a new chemical when the advertisement reproduced here appeared in 1927! This chemical, first successfully synthesized by Carbide, filled the long-standing need for a mild odored lacquer solvent. "Cellosolve" Solvent soon proved its usefulness in other applications as well. Today larger and larger quantities are used by many different industries.

This is but one instance of Carbide's continuing and successful synthesis and development of *useful* organic chemicals. Such pioneering has meant the growth, since 1920, from a pilot plant in Clendenin, West Virginia, to four large plants strategically located to serve an ever-growing demand for synthetic organic chemicals. This growth has been accompanied by the synthesis and introduction of whole new groups of chemicals now industrially important such as the glycols, glycol-ethers, the ethanolamines, the higher alcohols, "Flexol" plasticizers, and "Tergitol" wetting agents.

Our staff of chemically trained representatives is ready to help in applying synthetic organic chemicals to your product and process problems. When writing for information, please address Department P-6

"Flexol," "Tergitol," and "Cellosolve" are trade-marks of C. & C. C. C.

CARBIDE and CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York 17, N. Y.

Offices in Principal Cities

In Canada:

Carbide and Carbon Chemicals, Limited, Toronto

Joanna Textile Mills Company, Goldville, S. C., has done away with the necessity for boring holes in floors when installing looms and other heavy, vibrating machinery.

Gone, too, is the need for bolts and lag screws.

Like so many other up-to-date mills throughout the country, Joanna anchors its machines with Unisorb. A special cement binds Unisorb to the floor and holds the machine firmly to the Unisorb. This cement is unaffected by the action of any petroleum products.

Installing this modern Unisorb way saves costly time and labor. And by absorbing vibration, Unisorb cuts down shutdowns, helps minimize the expense of machinery and building maintenance—every day and every year, from the first hour you put it to work. Send for sample and complete specifications.

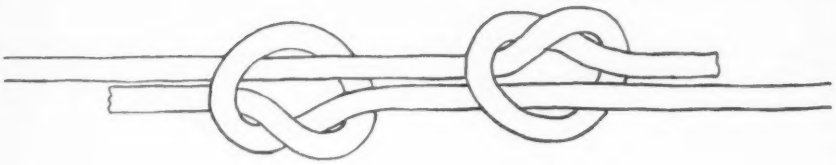
THE FELTERS COMPANY

210-W SOUTH STREET, BOSTON, MASSACHUSETTS

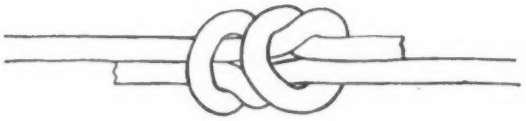
Offices: New York, Philadelphia, Chicago, Detroit.
Sales Representatives: San Francisco, St. Louis.
Southern Representative: Industrial Supply Co., Clinton, S. C.
Mills: Johnson City, N. Y.; Millbury, Mass.; Jackson, Mich.

Foreign Representatives: ARGENTINA—PARAGUAY: Roberto Zander, 345-353 Juan Jaures, Buenos Aires; BRAZIL: Cia Industria E. Comercio Glossop, Rua Visconde de Inhauma, 62, Caixa Postal, 265, Rio de Janeiro; Rua Florencio de Abreu 438/442, Caixa Postal, 1546, Sao Paulo; CHILE: W. L. Robinson, Casilla No. 4075, Santiago; COLOMBIA: C. E. Halaby & Co., Ltd., Airmail Box 650, Medellin; EASTERN MEDITERRANEAN AREA: The Arlind Corp., 509 Madison Avenue, New York 22, N.Y.; URUGUAY: Roberto Zander, Montevideo Ltda., Calle Uruguay, 1711, Montevideo; VENEZUELA: Herbert Zander & Co., P. O. Box 1291, Caracas; MEXICO: I. Slobotzsky, Avenida Uruguay 55, Apartado 1192, Mexico, D. F.

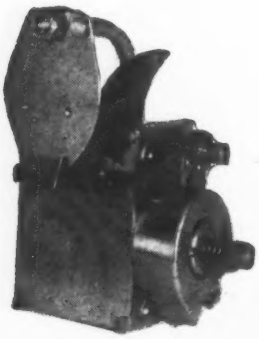
DO YOUR KNOTS SLIP?



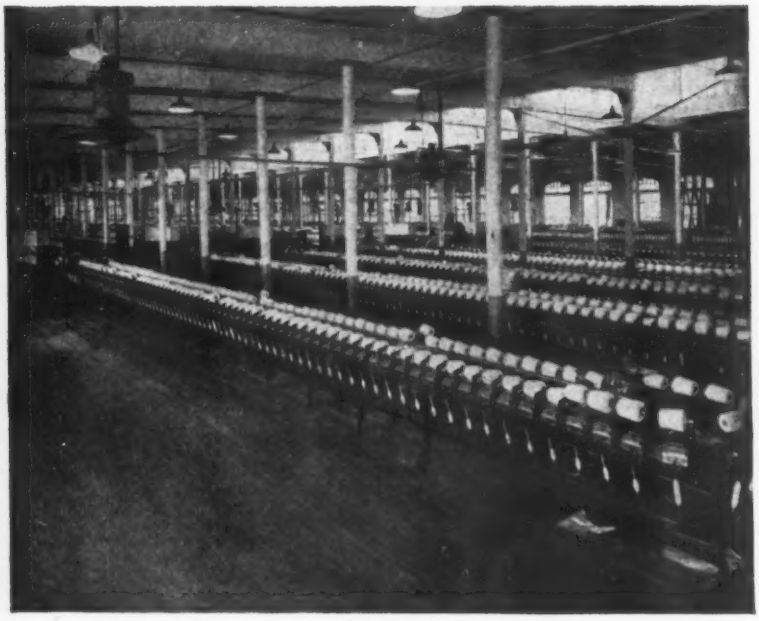
USE THE FISHERMAN'S KNOT



TWO SINGLE KNOTS PULLED UP AGAINST EACH OTHER



The knot tier is a small precision made unit that can be replaced by a spare knotter in two minutes

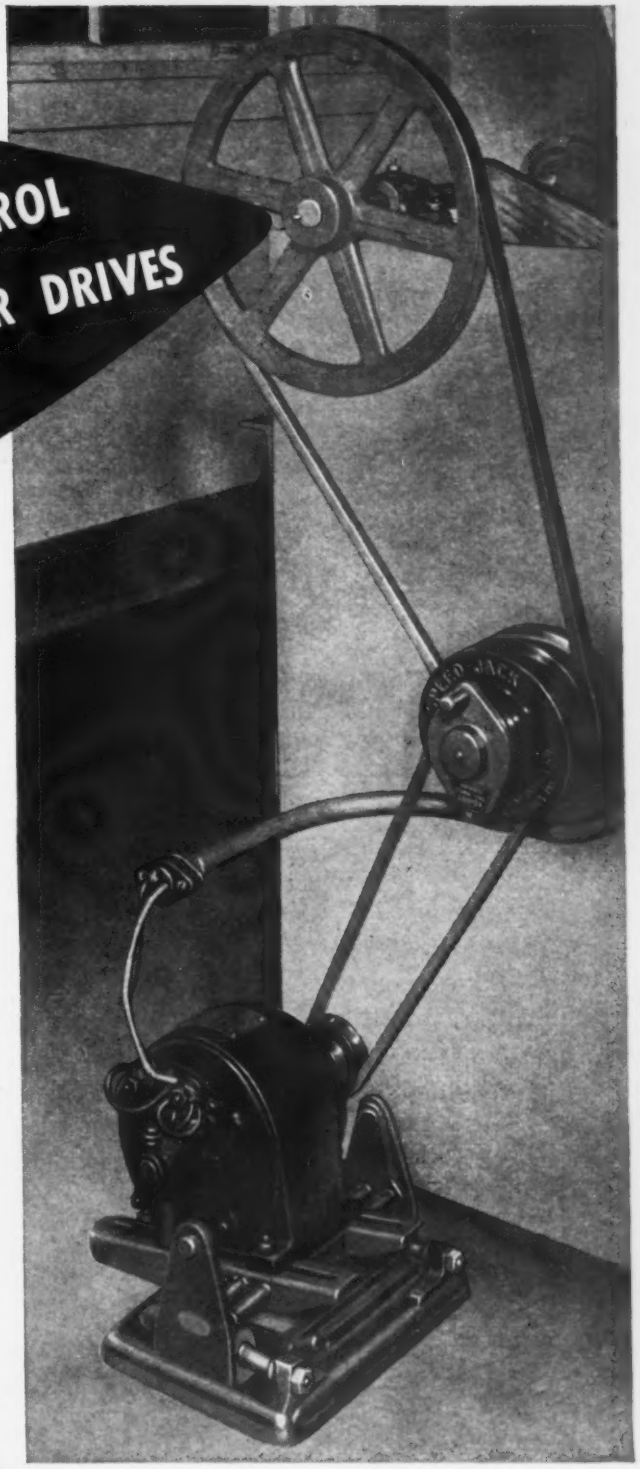


All of our Traveling Spindle Winders tie this small, smooth, non-slipping Fisherman's knot

ABBOTT MACHINE COMPANY

WILTON, N. H.

HERE'S VARIABLE-SPEED CONTROL FOR FRACTIONAL-HORSEPOWER DRIVES



This new idea in variable-speed control can help you get top product quality on jobs where precise speed is a "must." American Speed-Jack Drives with *"Tailored Speed"* give you smooth *stepless* control of speed through a 3-to-1 ratio. There's no down time for pulley change-over. Your machines with fractional-horsepower drives can now take on jobs previously impossible with fixed or multiple-speed drive limitations. And you get these advantages *plus* quick, easy mounting—horizontally, vertically or *at any angle* — on your machines. Further, this versatile drive is particularly adaptable to remote control. Where your machine set-up requires mounting the unit in a hard-to-get-at position, you can now get *positive* variable-speed control through the use of a compact flexible shaft.

Get more information on how American Speed-Jack Drives can cut costs and boost output on your jobs where quality depends on precise speed. The Speed-Jack Drives Bulletin gives you complete construction details, dimensions and suggested applications. Drop us a line for your copy, now.

How Speed-Jack Drives Give You "Tailored Speed" For Higher Output, Reduced Down Time!

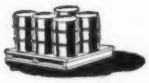
American Speed-Jack Drives enable you to quickly, easily "custom-fit" your machine speed to the individual needs of each job—without interrupting machine operation. Yes, Speed-Jack Drives enable you to actually "tailor" machine speed to job requirements for greater operating efficiency, higher product quality, lower unit costs.

The American Pulley Company

4262 WISSAHICKON AVE., PHILADELPHIA 29, PA.

First, INDUSTRIAL TRUCKS . . .

Then, PALLETIZED UNIT LOADS . . .



Now, STANDARDIZED

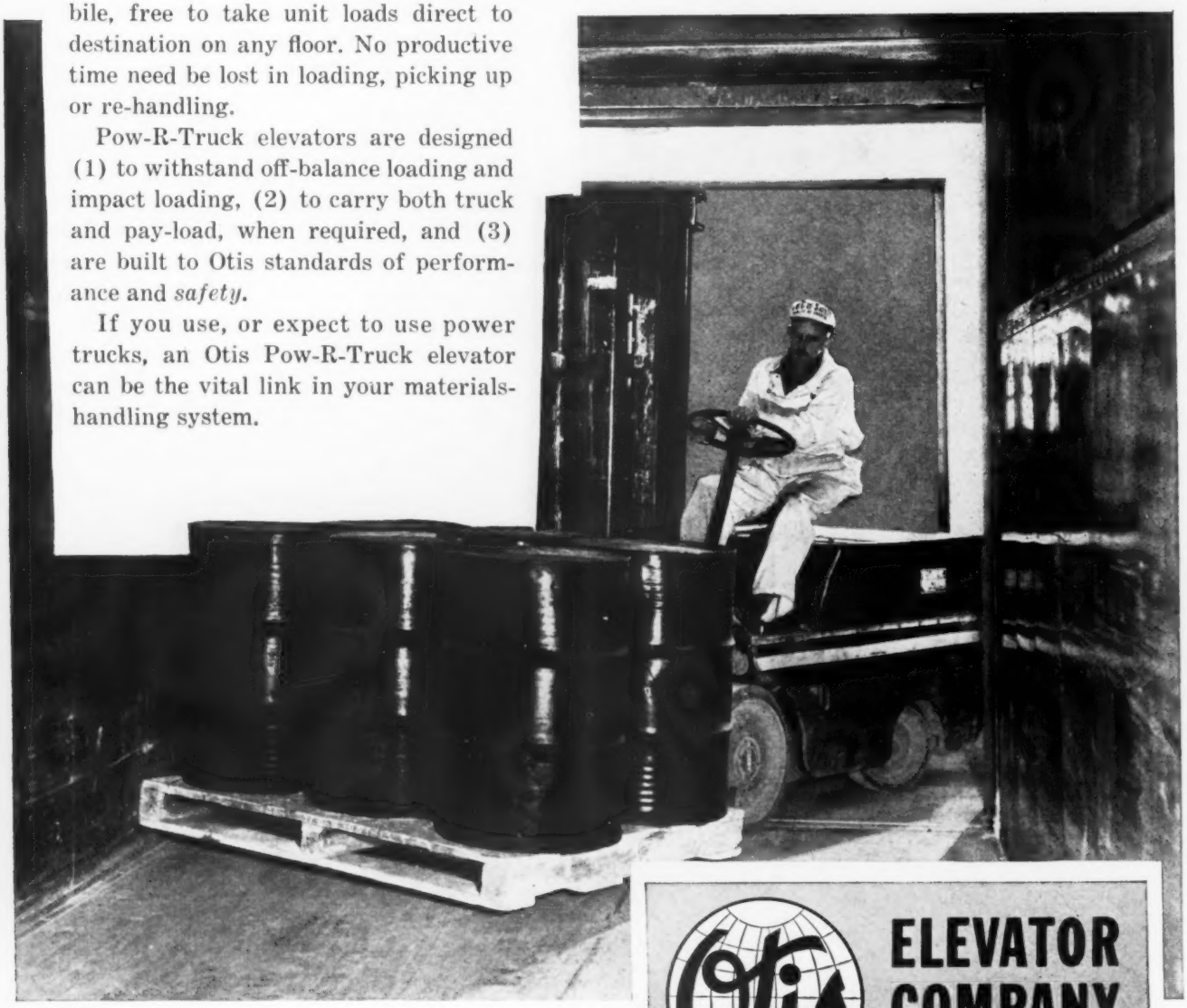
POW-R-TRUCK ELEVATORS!

This latest addition to the Otis line of standardized freight elevators—previously available only as a custom-built "special"—adds *floor-to-floor travel* to the many other time- and labor-saving advantages of industrial trucks . . . effectively increasing their usability.

With a Pow-R-Truck elevator an industrial truck becomes *completely* mobile, free to take unit loads direct to destination on any floor. No productive time need be lost in loading, picking up or re-handling.

Pow-R-Truck elevators are designed (1) to withstand off-balance loading and impact loading, (2) to carry both truck and pay-load, when required, and (3) are built to Otis standards of performance and *safety*.

If you use, or expect to use power trucks, an Otis Pow-R-Truck elevator can be the vital link in your materials-handling system.



For illustrated folder please address Otis Elevator Company, 260 Eleventh Ave., New York 1, N. Y.

Otis ELEVATOR COMPANY
OFFICES IN ALL PRINCIPAL CITIES

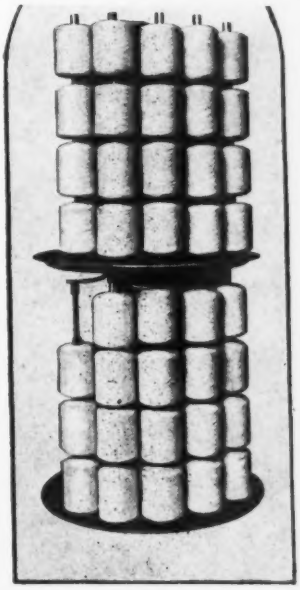
Obermaier

Reg. Trade Mark

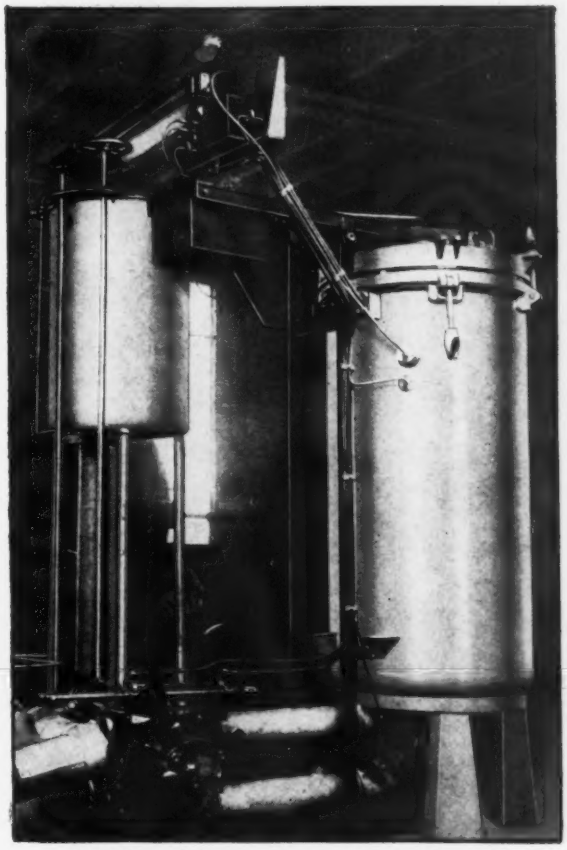
COMBINATION BEAM AND PACKAGE DYEING MACHINE

Stienen

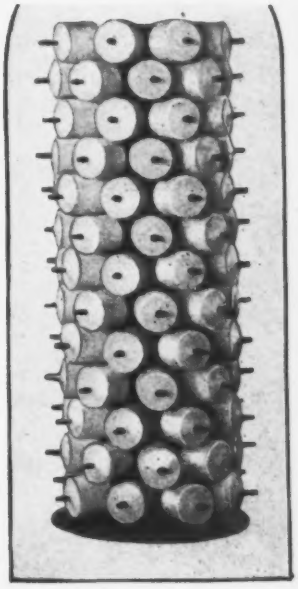
Trade Mark



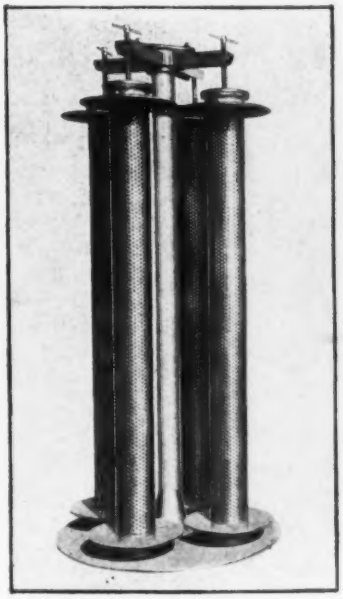
Stainless Steel Double Material Package Carrier



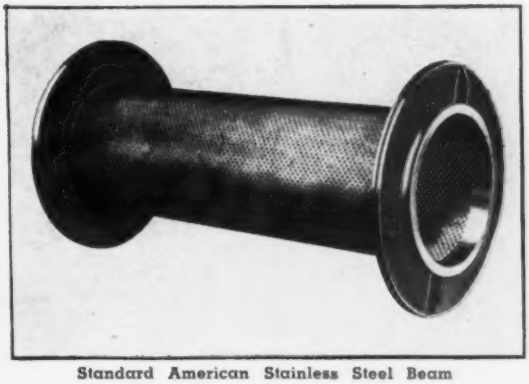
Model Kam Stainless Steel Combination Beam and Package Dyeing Machine—Capacity, One to Six Beams.



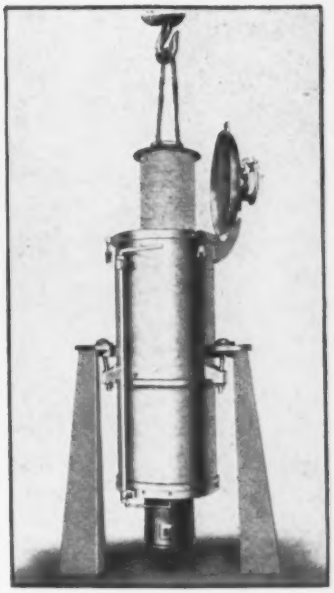
Stainless Steel Porcupine Package Material Carrier.



Stainless Steel Material Carrier with Four Small Beams.



Standard American Stainless Steel Beam



Stainless Steel Centrifugal Beam Extractor.

Standard Fabricators

INCORPORATED

355 WALTON AVE. NEW YORK 51, N. Y.

BUILDERS OF

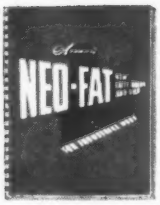
DYE-SPRINGS

TRADE MARK

COTTON AND WOOL DYEING MACHINES — FOR BEAMS — PACKAGES — RAWSTOCK — SKEINS — RAYON CAKES — DYE SPINDLES — PERFORATED TUBES — CENTRIFUGAL PUMPS — EXTRACTORS AND DRYERS

These new and important Armour chemicals give still broader scope to the rapidly expanding field of textile chemistry. Write today for any or all of the following booklets relevant to your specific fields of research. Yours without charge.

New Chemicals For Textile Chemists



NEO-FATS . . . Fractionated pure fatty acids. Uses: starting materials for synthetic detergents, resin coatings, emulsifiers, wetting agents, water-repellents, softeners, lubricants.

ARMEENS . . . Aliphatic amines (and ARMACS, their acetate salts). Textile uses: cationic emulsifiers, detergents, germicides, rodenticides, mildew resistants, fire-retardants, penetrants, water-repellents.

ARMIDS . . . Aliphatic amides. Among their many and varied textile applications: finishing waxes, coating resin ingredients, water-repellents, plastic anti-blocks.

ARNEELS . . . Aliphatic nitriles. Interesting textile applications as wetting agents, water-repellents, detergents, softeners, detergent aids, rodent repellents.

ARQUADS . . . Quaternary ammonium salts. Indicated textile uses include: cationic softeners, germicides, cationic emulsifying agents, algae controllers.

ARMOUR *Chemical* **DIVISION**

Armour and Company

1355 West 31st Street • Chicago 9, Illinois

Narrow aisles are no obstacle to the Hyster "20". The compact unit, only 36" wide, is a money-saver in crowded factories, warehouses; loading and unloading box cars. Hyster makes seven models — from the 2000-lb. capacity "20" to the 30,000-lb. capacity MH Straddle Truck. Write for catalogs.

RIGHT DOWN YOUR AISLE!

Crowded for room? Space at a premium? Material handling costs too high?

TRY OUT A HYSTER "20"

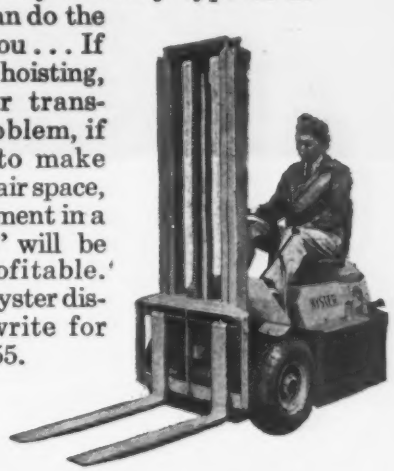
The 2000-lb. capacity Hyster "20" is made to order for narrow aisles in warehouses, factories, parts departments, box cars, in any close quarters. Only 36" wide with rounded rear end it can turn in tight spots and crowded spaces.

Pneumatic tires also are factors in Hyster's maneuverability. The "20" is equally at home on smooth or rough surfaces, indoors or outdoors. And the powerful air-cooled gasoline engine gives you speed up to 12 m.p.h. in either direction.

Conventional controls — two speeds forward and two speeds reverse—make the "20" as easy to operate as a passenger car.

Hydraulic lift hoists 2000 lbs. 9 feet. Other lifts from 6' to 12' are available, as are special lift truck tools for out-of-ordinary jobs.

The Hyster "20" is saving time — labor — money in every type of industry. It can do the same for you . . . If you have a hoisting, stacking or transporting problem, if you want to make use of "free" air space, your investment in a Hyster "20" will be highly profitable. Call your Hyster distributor; write for Catalog 1055.

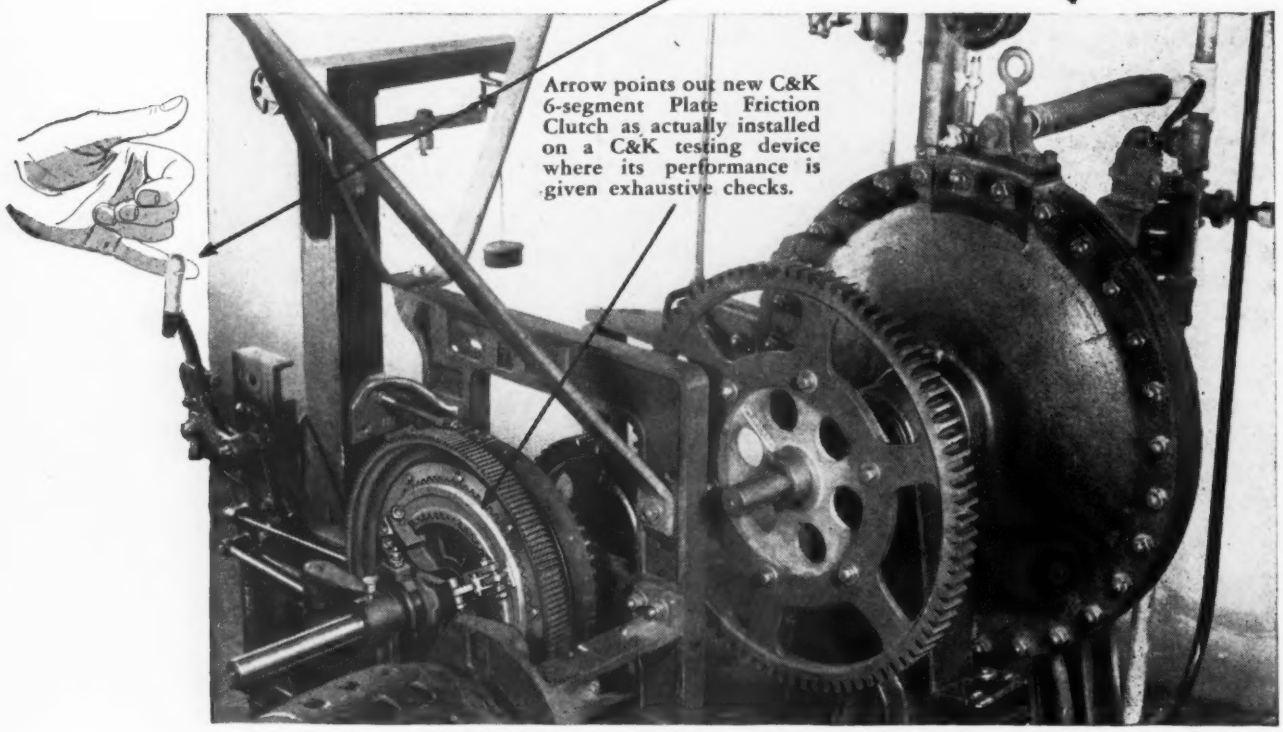


HYSTER COMPANY

2922 N. E. Clackamas St., Portland 8, Oregon
1822 North Adams Street, Peoria 1, Illinois

Distributors in Principal Cities

When a Loom-Clutch *Operates this easily...*



Arrow points out new C&K 6-segment Plate Friction Clutch as actually installed on a C&K testing device where its performance is given exhaustive checks.

...Here's what it means to you—

AN EASY PULL WITH THE LITTLE FINGER is all it takes to operate the shipper-handle of this C&K S6 Loom . . . thanks to the new C&K Plate Friction Clutch pointed out in the photograph above.

This new type of clutch comprises 6 geared friction-segments which engage and disengage with unheard-of ease. And the clutch mechanism is designed so that the slight shipper-handle pull is magnified to a level sufficient to carry loads far in excess of those required. *To you, this means* quick, positive operation, and a smoother-running loom.

And here's another advantage: This clutch carries instantaneous loads with far less slippage than formerly — and with far less wear. In fact, this wear — over a period of months — *can still be measured in mere thousandths of an inch.*

And still another advantage: This new clutch operates months longer without adjustment. Banging-off and parts breakage are minimized. Loom-fixing time is sharply reduced.

This is one of the many continuing studies in C&K's Engineering Research Laboratories . . . one of many such studies all co-ordinated and focussed toward a single objective which, to you, means just this: New C&K Looms which are easier to operate . . . which will operate with far fewer loom-stops . . . and which will require far less maintenance than ever before.

Crompton & Knowles Loom Works

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PHILADELPHIA, PA. • CHARLOTTE, N.C. • ALLENTOWN, PA.

CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

between Today's Knowledge . . . and Tomorrow's Looms

Hydroxanil

the Multi-Purpose

DEVELOPER

HYDROXANIL is not only excellent for acetate and nylon blacks but also finds extensive use as a developer for rayon and cotton developed colors. These include Diazo Black BH, Diazo Green 3G, Primuline, etc.

Wash-fast developed blacks on acetate and rayon combination materials may be obtained by using Maracel Developed Black A and Diazo Black BH diazotized and developed with Hydroxanil. This method produces greater wash-fastness than when this type of material is dyed with acetate and direct blacks.

Hydroxanil is simple to use—requires no caustic soda. Simply stir into boiling water and add to developing bath.

...Develops Complete in 30 Minutes!

No excess rinsing or soaping required! Two batches dyed in the time usually required for one.

MARCO PRODUCTS

MAHER COLOR & CHEMICAL CO.

FACTORIES AND LABORATORIES

358 West Ontario Street, Chicago 10, Ill.

2327 East Eighth Street, Los Angeles 21, Calif.

Courtesy Pickett and Eckel, Inc., Chicago, Ill.

Slide rule case made from GEON resins suggests applications in every industry

THAT slide rule case was made from GEON polyvinyl resins for several definite reasons. For one thing it will last indefinitely because it resists abrasion, sunlight, aging, perspiration. It's easy to clean because dirt can't penetrate its smooth surface. It's lightweight and easy to handle. It won't rub off on other materials.

All these facts—and many more—apply just as well to the literally limitless number of other products that can be made from GEON. For in addition to the properties of the slide rule case, products made from GEON can be resistant to oils, chemicals, heat, cold, mildew, and most other normally destructive factors.

And GEON can be pressure or injection molded, extruded, calendered or cast into sheet or film. In solution or latex forms it can be applied as coatings or impregnants for fabrics, fibres, paper and cardboard. Products made from GEON may be flexible or rigid, clear or opaque, brilliantly or delicately colored.

Products made from GEON range from shower curtains to tank linings, fly swatters to wire insulation, upholstery to highway markers—and many, many more.

Doesn't all this suggest some product that could be made better from GEON?

While we make no finished products from GEON, we'll be glad to help you with special problems or applications. For more information, please write Dept. M-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio. In Canada: Kitchener, Ont.

B. F. Goodrich Chemical Company

A DIVISION OF THE B. F. GOODRICH COMPANY

GEON polyvinyl materials • HYCAR American rubber • KRISTON thermosetting resins • GOOD-RITE chemicals

Use them inside or OUTDOORS!

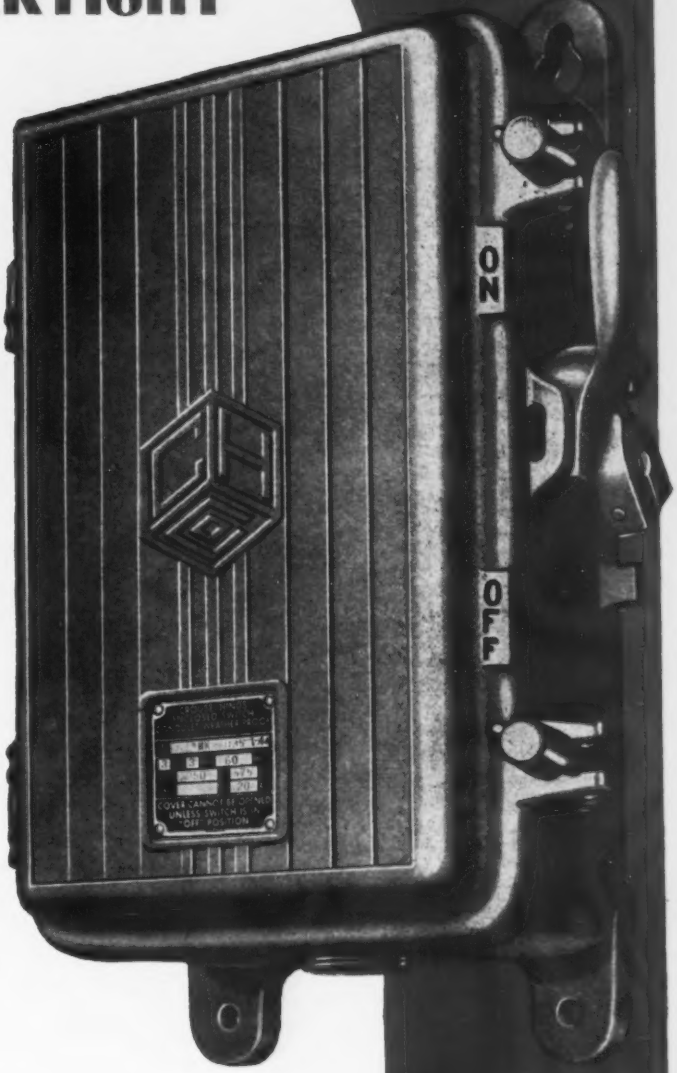
It's all the same to Type WMK

RAINTIGHT and WATERTIGHT*

Enclosed Safety Switch

CONDULETS

**NEMA Types III and IV*



Safety. Positive interlock prevents opening the case unless switch is "off." Dead front switch is held in "off" position while case is open.

Switches. Quick make and break mechanism. Double break, reinforced, positive pressure-type blade and jaw construction. Positive pressure fuse clips. Combination solder or solderless wire lugs.

Cast metal case. Strong and durable. Four sturdy mounting feet. Many possible threaded hub arrangements for both vertical and horizontal conduit. Cover may be padlocked to prevent unauthorized entry. Operating handle may be padlocked "on" or "off."

Permanent lubrication in the threaded operating shaft bearings resists corrosion and prevents the entrance of dust and moisture.

Horsepower ratings. 2 through 50-H.P. 30, 60, 100 or 200-ampere. 230-575-volt A.C. 250-600-volt D.C.

Listed in Condulet Catalog 2500, Section 50, Page 20.

CONDULET is a coined word registered in the U. S. Patent Office. It designates a product made only by the Crouse-Hinds Company.

A Nationwide Distribution Through Electrical Wholesalers

Our 50th Anniversary
1897 — 1947

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CROUSE-HINDS COMPANY OF CANADA, LTD., *Main Office and Plant:* TORONTO, ONT.

CONDULETS
FLOODLIGHTS
TRAFFIC SIGNALS
AIRPORT LIGHTING

This man can show you

WHERE TO LOOK FOR BETTER YARN QUALITY

GOOD YARN QUALITY depends on many more things than the traveler. But it is equally true that, without the *right* traveler, both quality and production are badly off.

If your spinning or twisting is not up to snuff, it's a good time to talk to a Victor Service Engineer.

He can help you select the right traveler for the job. He can also suggest other ways to keep your frames producing—more top-quality yarn per frame per day.

You'll find the Victor Service Engineer easy to talk to. He is thoroughly mill-trained, and he has sat in on thousands of spinning and twisting problems. He is familiar with all of the quirks of cotton, wool, and rayon, and has up-to-the-minute information on new fibres and new blends.

Talk over your troubles with him, traveler-wise. He'll call at your request. Write, wire, or phone the nearest Victor office.

Keep a Step ahead with

VICTOR Ring Travelers

VICTOR RING TRAVELER COMPANY

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With Color added—a wisp of net and a bolt of taffeta become Dame Fashion's latest creation; a drum of drab lacquer transmutes into eye-compelling nail enamel; a calfskin kip and a swatch of suede become Cinderella slippers... precious far beyond the value of such prosaic raw materials.

Such is the magic of Color in giving these materials dramatic, high-style value in consumer markets. Indeed the sales appeal of Color in modern merchandising is still in its infancy.

To capitalize the selling power of Color in the competitive days ahead, always specify National Aniline Dyes.

WHEREVER COLOR IS USED

National Aniline

DIVISION OF

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For Manufacturers and Merchants

Inquiries as to our services solicited

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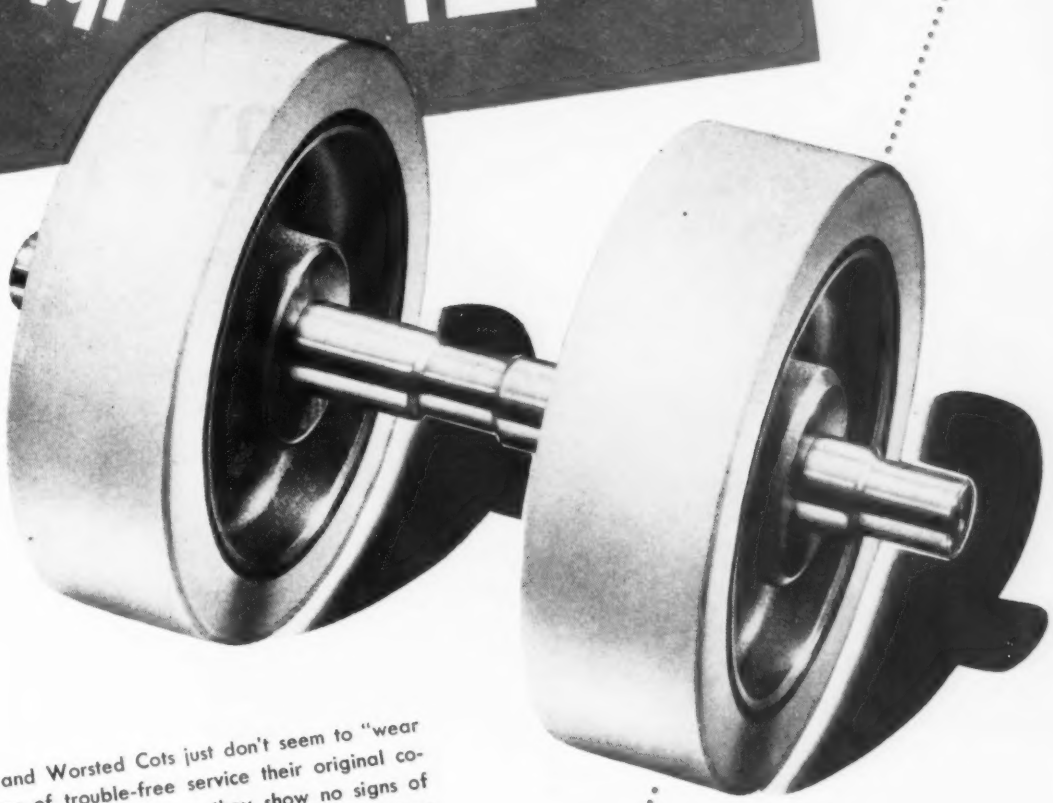
ESTABLISHED 1840

Daycos outlast other type cots 12 to 1



Dayco Woolen and Worsted Cots just don't seem to "wear out". After years of trouble-free service their original coefficient of friction is retained . . . they show no signs of grooving or other deterioration, resilience is retained and they continue to produce more uniform yarn while outlasting other type cots 12 to 1. Made of special rubber compounds, Daycos are not affected by moisture, temperature extremes and other adverse operating conditions. These are but a few of the reasons why reports continue to come in from mill after mill—mill-proved records that prove Dayco equipped mills are enjoying lower production costs . . . greater production economy. Write today for additional information to:

TEXTILE PRODUCTS DIVISION • DAYTON RUBBER

Main Sales Office: Woodside Bldg., Greenville, S. C.

Factory: Waynesville, N. C.

ADDITIONAL REASONS

They simplify production schedules. More production of wanted numbers.

Any combination of wool, rayon and mohair can be run equally well with a minimum of lint.

Much less matching up required since they produce highest yarn uniformity.

Replacement kept at minimum.

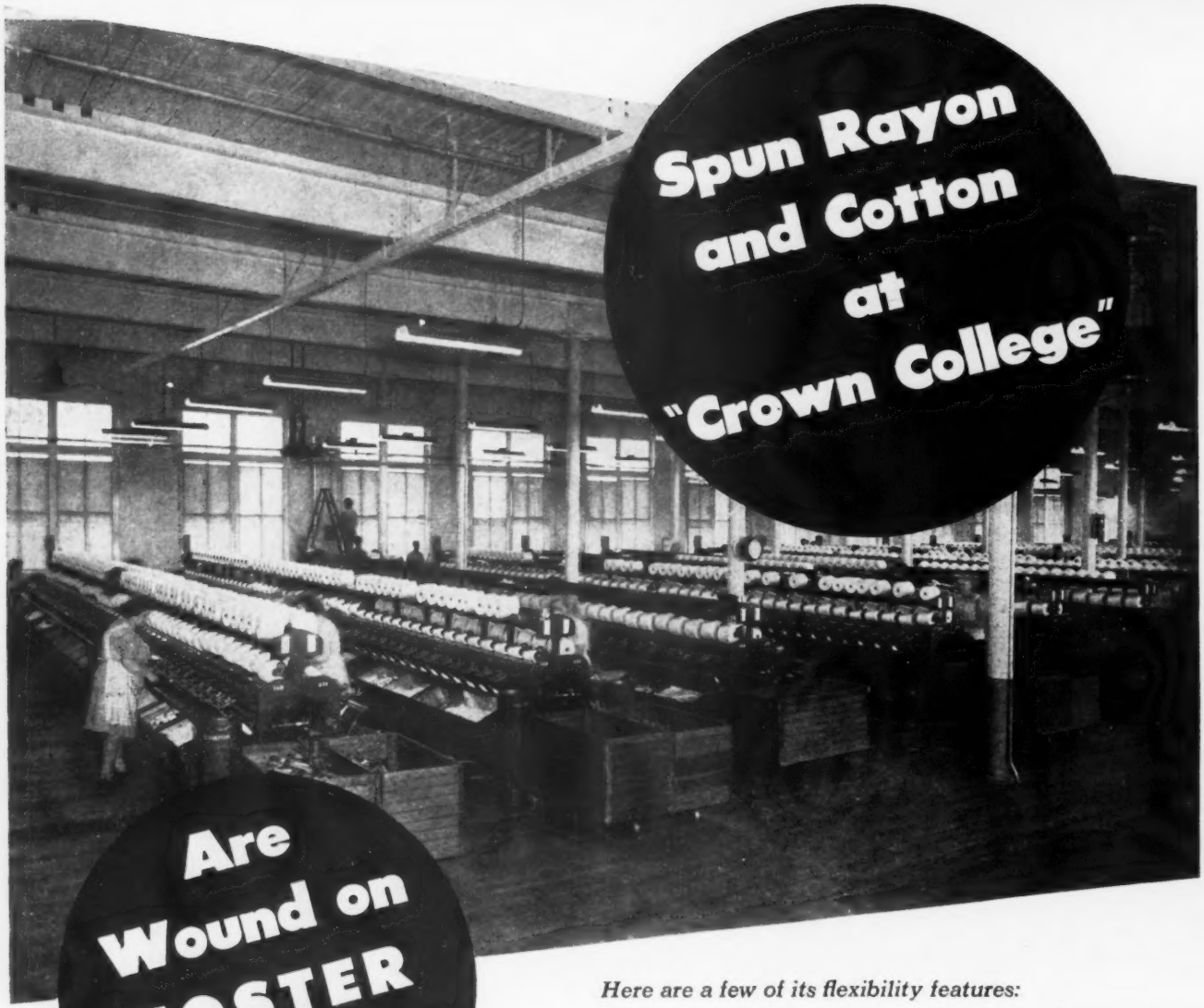
They save up to two thirds of the time required in applying arbors.

Save time and labor formerly spent readjusting pressures after shutdowns.

They reduce your power requirements.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER



Spun Rayon and Cotton at "Crown College" Are Wound on FOSTER Model 102

When the Crown Manufacturing Company of Pawtucket, R. I., ("Crown College"), decided to standardize on Foster winding and doubling equipment, it was because Foster superiority had been demonstrated in a series of thorough-going tests. Crown wanted the increased production, decreased operating and maintenance costs, and high quality inspected yarn that Foster 102 provides.

This company handles from 8/1 to 60/2 in spun rayon, fine cotton and blends for gabardines, tropicals and cavalry twills. 8¼" diameter supply cones weighing 4¼ lbs. are wound and inspected on Foster Model 102's. Crown, like many other mills where quality comes first, insists on Foster 102, the flexible winder.

Here are a few of its flexibility features:

(1) Winds any type or count staple yarn. The same traverse mechanism which handles cotton yarn will handle worsted yarn without excessive wear.

(2) Produces any cone taper commonly used and any angle of wind from 9° to 18°.

(3) Can be equipped to wind knitting cones, warping cones, parallel tubes, dye packages or short traverse cheeses. Winds cones on one side of machine and tubes on the other, if desired.

(4) Winds dyed yarn even when damp; also conditioned yarn.

(5) Can be built to wind up to 7" traverse.

SEND FOR BULLETIN A-91

FOSTER MACHINE CO.

WESTFIELD, MASS.

SOUTHERN OFFICES: JOHNSTON BLDG., CHARLOTTE, N. C.; CANADIAN REPRESENTATIVE: ROSS, WHITEHEAD & CO., LTD., UNIVERSITY TOWER BLDG., 660 STE. CATHERINE ST. W., MONTREAL, QUEBEC.

"We have a 15 year record of low maintenance and power costs with

The Overseer of carding in a prominent southern mill (right) consults with a Gulf Lubrication Engineer on comber lubrication.

"FOR OVER 15 YEARS proper lubrication with Gulf quality oils and greases has been the basis for our effective preventive maintenance program," says this Overseer. "Roll necks and other key parts of our combers, for example, stay clean and free from excessive wear with the oil recommended by the Gulf Lubrication Engineer — it shows no evidence of oxidation or gumming."

Are you putting up with excessive power and maintenance costs for your card room? Why not call in an experienced Gulf Lubrication Engineer today in a further effort to improve your lubrication and reduce your costs?

Gulf Lubrication Engineers are specialists in scientific textile mill lubrication. Through training and experience in the selection of the most suitable lubricants and the most efficient means of application, they help effectively to reduce wear, improve efficiency, and cut power and maintenance costs.

The services of a Gulf Lubrication Engineer—and the Gulf line of more than 400 quality oils and greases—are available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write, wire, or phone your nearest Gulf office today.

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Gulf Oil Corporation · Gulf Refining Company

Division Sales Offices:

Boston · New York · Philadelphia · Pittsburgh · Atlanta
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Clothe your cards with a
TUFFER TENSION REGULATOR
and Tuffer Motor Drive

Using the Tuffer Tension Regulator and Tuffer Motor Drive, one man and a helper can clothe the most difficult roll in an exceedingly short time!

Whether used on cylinders or doffers, the Tuffer Tension Regulator puts on card clothing with smooth, even tension. You'll do it faster and better with the Tuffer Tension Regulator and Tuffer Motor Drive!

Tuffer Tension Regulator

A rugged, lightweight device for regulating tension when clothing cards. Sturdy steel construction — no complicated parts—weighs only 62 lbs. Frictionless, sealed roller bearings.

Tuffer Motor Drive

A small electric motor sends its power through gear reduction to the shaft of a cylinder or doffer. Simple sleeve-bushings make it custom fitted to the cards. Plugs in like a vacuum cleaner — takes but little more power.

Why do it the hard, costly way when you can use a Tuffer Tension Regulator? For complete information . . . ask our representative or write to any Howard plant or branch office.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.

Branches: Philadelphia, Pa. and Blanco, Texas *Direct Representation in Canada* A-4

TUFFER CARD CLOTHING

IMPROVES PRODUCTION ALL ALONG THE LINE

IMMEDIATE DELIVERY

STAINLESS STEEL

COOPER ALLOY

WELDING FITTINGS *

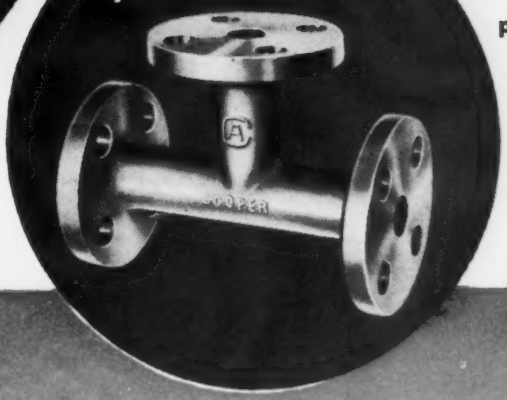
* SEAMLESS FORGED

* PRESSED and WELDED

STAINLESS STEEL SCREWED FITTINGS

Cooper offers a complete line of Stainless Steel Welding Fittings including 45°, 90° and 180° elbows, tees, caps, reducers and lap joint stub ends. Each are annealed, sandblasted and passivated for maximum corrosion, abrasion and heat resisting characteristics. The unusual performance of these fittings is the result of Cooper's 25 years of Stainless Steel "know-how."

STAINLESS STEEL FLANGED FITTINGS

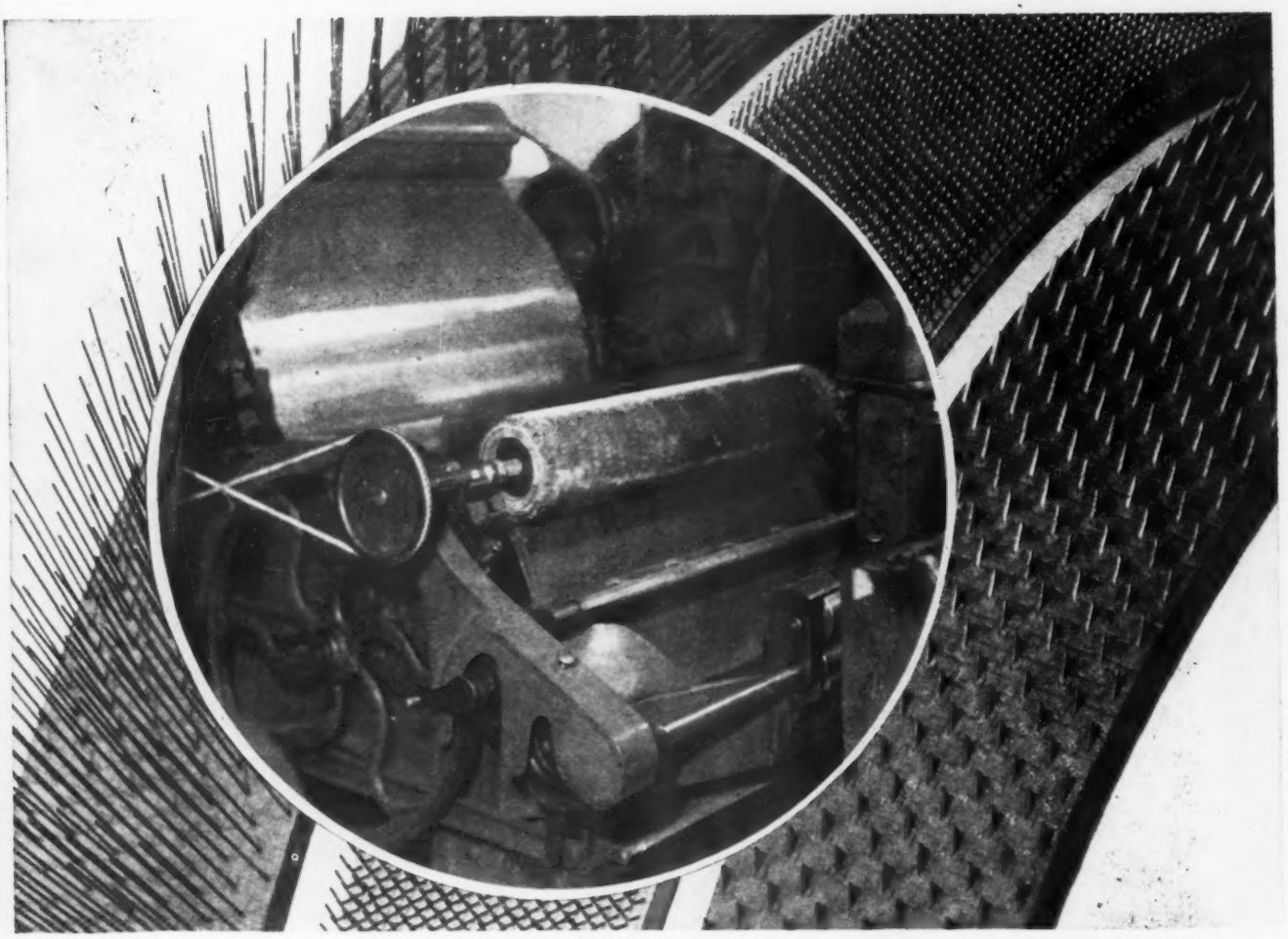


THE COOPER ALLOY FOUNDRY CO.

HILLSIDE, NEW JERSEY

World's largest producer of Stainless Steel Screwed, Flanged and Welding Fittings

HOW TO ADD LIFE TO YOUR CARD CLOTHING



Use The Right Stripping Brush Regularly!

Impacted waste, hulls and other foreign matter that the vacuum stripper does not reach can best be removed by the stripping brush. Weekly use of the right stripping brush is not only necessary for good carding but will help you get the maximum life from your card clothing.

To achieve best possible results, it is important that you select the proper type brush. Our service representative will be glad to help you in this selection. He can show you how and why the brush he recommends is best for your needs.

The cost of stripping brushes is negligible, and they should be replaced often. A brush in poor condition frequently causes selvages full of neps, shiners (wire knocked forward), and loose fillets.

Call in your Ashworth service representative for expert advice in stripping brush selection. Then use the right brush regularly.

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO. (Woolen Div.)
Fall River*†‡ Worcester*‡ Philadelphia*†‡ Atlanta†‡
Greenville†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)
*Factory †Repair Shop ‡Distributing Point

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Card Clothing for Cotton, Wool, Worsted, Silk, Rayon and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed.

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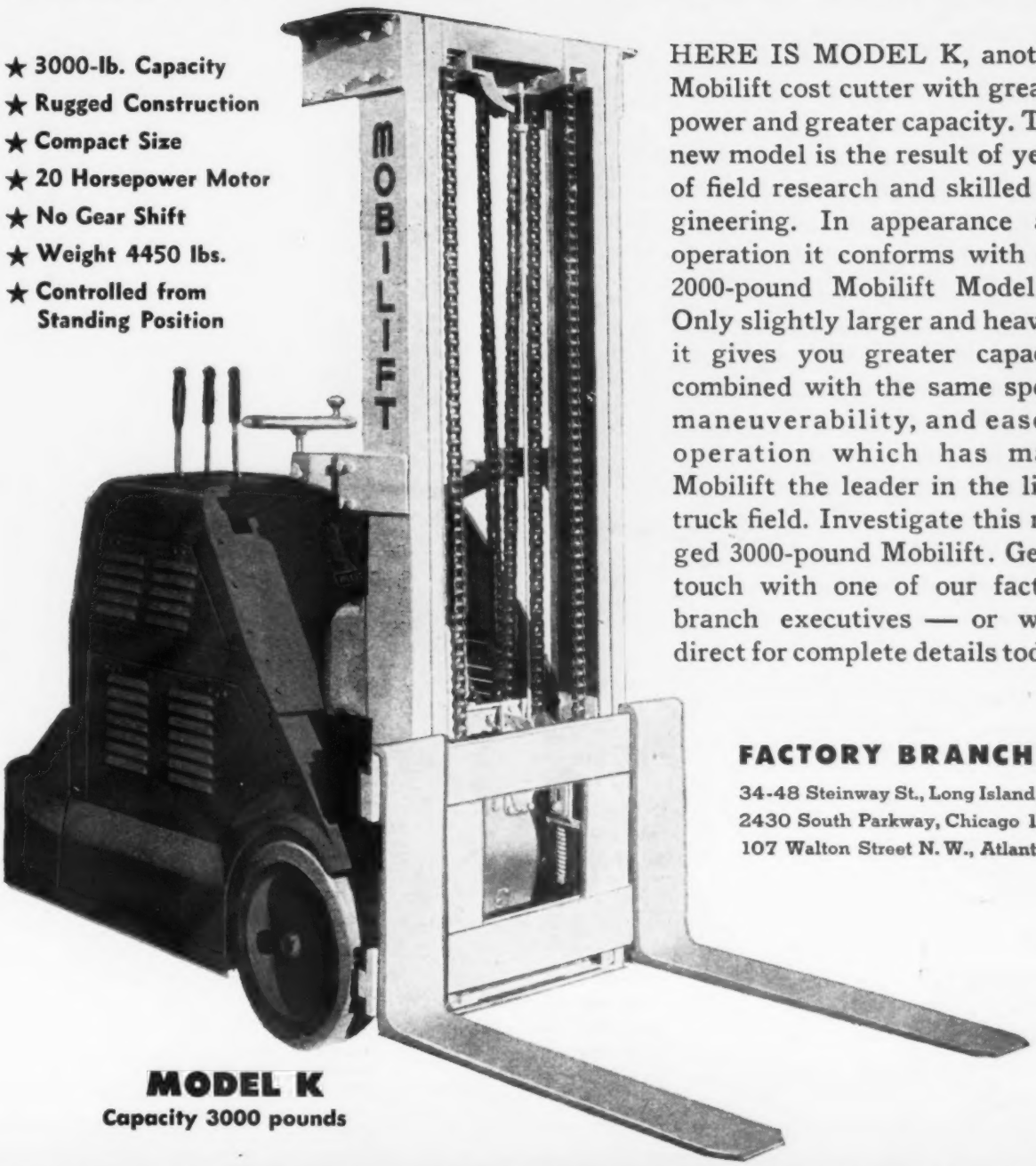
3 FACTORIES • • • 6 REPAIR SHOPS • • • 7 DISTRIBUTING POINTS

MOBILIFT *Presents*

A NEW 3000 POUND MODEL!

- ★ 3000-lb. Capacity
- ★ Rugged Construction
- ★ Compact Size
- ★ 20 Horsepower Motor
- ★ No Gear Shift
- ★ Weight 4450 lbs.
- ★ Controlled from Standing Position



MODEL K
Capacity 3000 pounds

HERE IS MODEL K, another Mobilift cost cutter with greater power and greater capacity. This new model is the result of years of field research and skilled engineering. In appearance and operation it conforms with our 2000-pound Mobilift Model F. Only slightly larger and heavier, it gives you greater capacity combined with the same speed, maneuverability, and ease of operation which has made Mobilift the leader in the light truck field. Investigate this rugged 3000-pound Mobilift. Get in touch with one of our factory branch executives — or write direct for complete details today!

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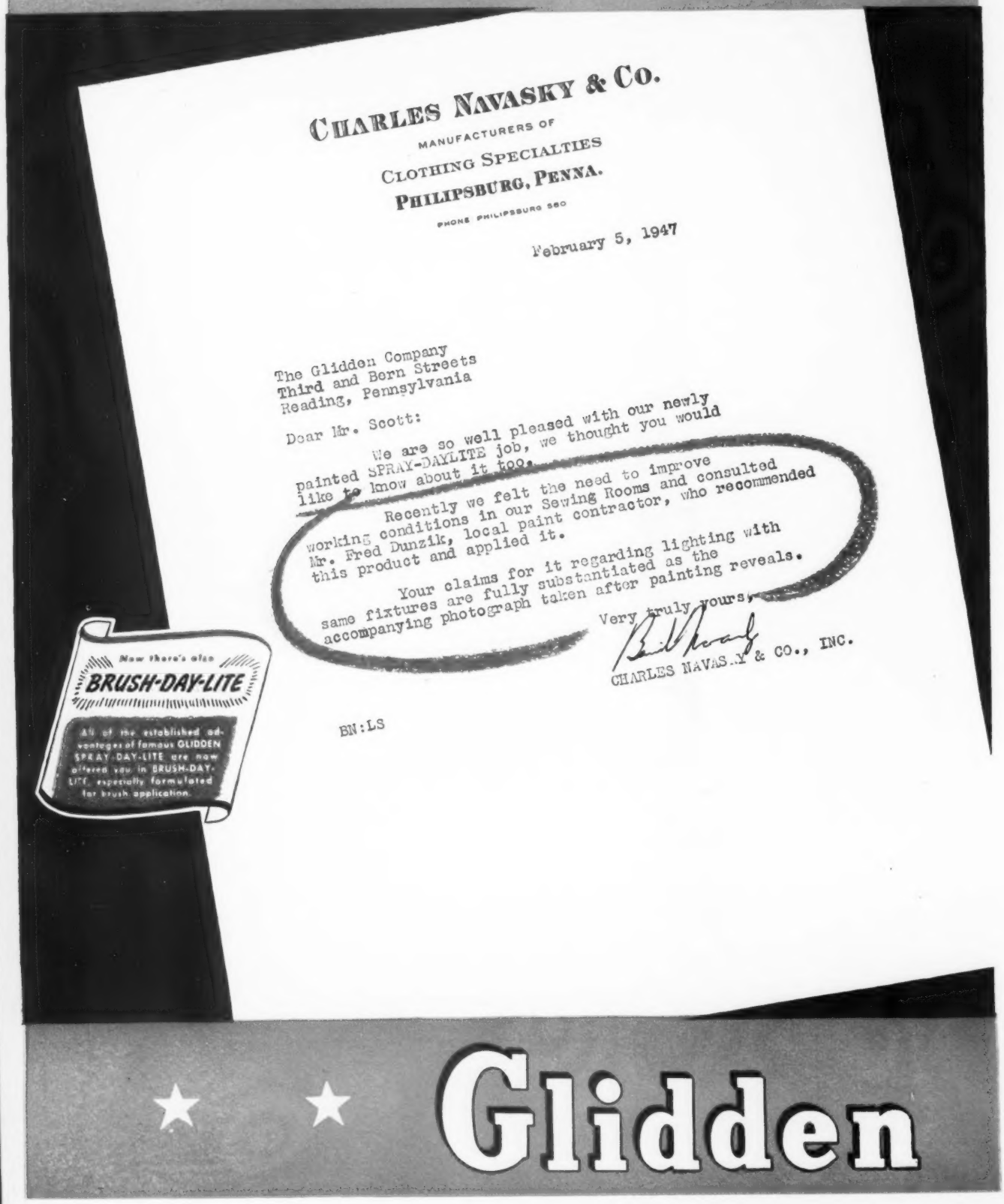
MOBILIFT *Moves Materials like a Giant!*

GENERAL EQUIPMENT CO. ★ 835 S. E. Main Street, Portland 14, Oregon

Improve lighting without adding lights!

You can't miss when you paint with...



CHARLES NAVASKY & Co.

MANUFACTURERS OF

CLOTHING SPECIALTIES

PHILIPSBURG, PENNA.

PHONE PHILIPSBURG 560

February 5, 1947

The Glidden Company
Third and Bern Streets
Reading, Pennsylvania

Dear Mr. Scott:

We are so well pleased with our newly painted SPRAY-DAYLITE job, we thought you would like to know about it too.

Recently we felt the need to improve working conditions in our Sewing Rooms and consulted Mr. Fred Dunzik, local paint contractor, who recommended this product and applied it.

Your claims for it regarding lighting with same fixtures are fully substantiated as the accompanying photograph taken after painting reveals.

Very truly yours,

CHARLES NAVASKY & CO., INC.

BN:LS

Now there's also

BRUSH-DAY-LITE

All of the established advantages of famous GLIDDEN SPRAY-DAY-LITE are now offered you in BRUSH-DAY-LITE, especially formulated for brush application.

★ ★ Glidden

SPRAY-DAY-LITE

Specify

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SPRAY-DAY-LITE

for all inside painting!

IT'S TODAY'S FASTEST SELLER FOR ALL THESE REASONS....

1 SPRAY-DAY-LITE gives conventional two-coat results in only one coat.

2 Increases lighting efficiency by giving *maximum* light reflection and diffusion.

3 Provides smooth, solid covering over grimy, dirty and badly discolored surfaces of almost any type.

4 Its intense white does not yellow with age (also available in 10 attractive colors).

5 Durable, egg shell finish eliminates eye-straining glare — washes like tile.

6 Sprayed or brushed, it does not sag or run; produces little fog or mist when sprayed.

FREE! **A Practical Guide to "Sight Perfection" in Plants by Glidden Color Authorities**

Tells and shows how to follow scientific, E-Z-C Color Planning in painting interiors and machines to ease eyestrain, boost production, reduce accidents. Send coupon for it today. If you don't find all the guidance you need in this book, the Glidden Color Studio will design color plans tailored to your particular needs—without charge.

Here's a coupon it will pay you to mail TODAY!

THE GLIDDEN COMPANY
Dept. T-6, 11001 Madison Ave., Cleveland 2, Ohio

☐ You may send your book on the scientific use of color in industrial plants, "Sight Perfection".

☐ You may send your SPRAY-DAY-LITE Color Chart showing the 10 attractive shades and suggested color combinations.

☐ You may have your representative call and demonstrate SPRAY-DAY-LITE in our premises without obligation on our part.

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Pacemaker in Paints

TIME-TESTED

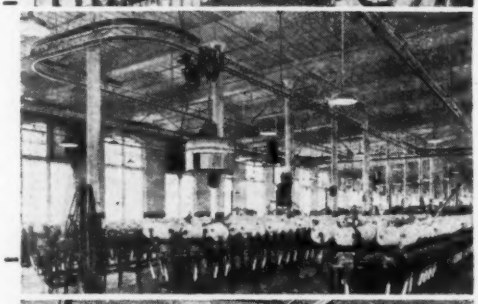
Automatic Cleaning PAYS

OVER SPINNING FRAMES

Lint is removed before it can accumulate and cause damage to yarn or spinning operations. Overhead travelling cleaners not only keep the frames clean but also send a blast of air toward the ceiling to eliminate hand cleaning of overhead equipment.

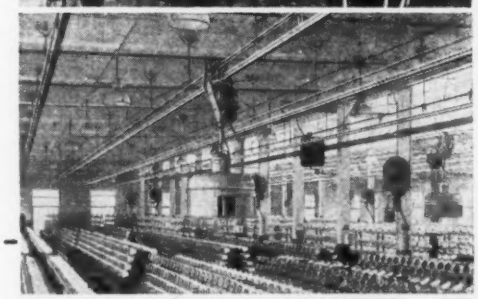
OVER WINDERS

High speed operation of winders can be greatly retarded by excessive lint. By preventing any accumulation on these machines maximum production is assured.



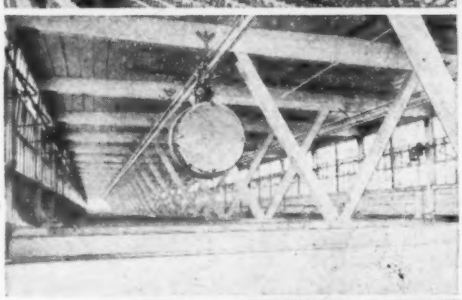
OVER TWISTERS

A swirling column of air circulates freely through twister creels to eliminate breakage due to line accumulation. Low head-room blower units overcome unusual ceiling conditions over high creels.



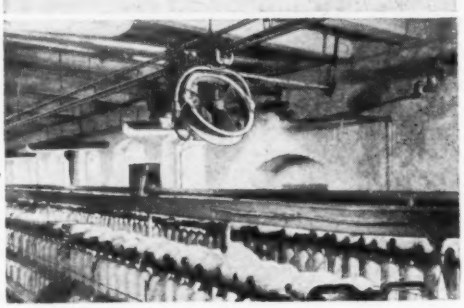
IN MONITORS

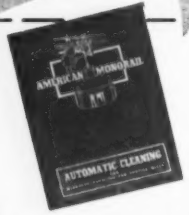
A propeller type fan distributes high velocity air currents across all structural members within the monitor. This replaces hand cleaning, breaks up air pockets and keeps the humidity evenly distributed over the work below.



OVER CARDS

Card room ceilings are notoriously hard to keep clean. A high velocity column of air from a travelling fan directed against the ceiling prevents accumulation of fly on ceiling equipment thereby eliminating the cost of hand cleaning as well as lost card production.





Let an American MonoRail Engineer explain the advantages of Automatic Cleaning. This information will be gladly given without obligation. Send for fully illustrated catalog "Automatic Cleaning and Overhead Handling for Textile Mills."

THE AMERICAN MONORAIL COMPANY

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TYPICAL ZEPHYR HYDRAXTOR *Success Story*

The Hydraxtor Pays Off at The Crib Diaper Service, Chicago, Illinois — Production Is Up, Labor Cost Is Down, Overall Efficiency Increased

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PHONE BRUNSWICK 8100

May 6, 1947

Zephyr Laundry Machinery Co.
212 E. Erie Street
Chicago, Illinois

Gentlemen:

Sometime ago we installed two Zephyr Hydraxtors in our washroom. These took the place of 2-60" extractors and 1-48" extractor.

Our experience on this equipment has shown that one man on the two hydraxtors can turn out more than 70,000 lbs. in a 40-hour week.

The labor cost with our Hydraxtors is down; the power cost is now very low and we get fast, wrinkle-free extraction on both netted work and bulk work.

One of the main features of your equipment is the ease of installation and the fast extraction without noise in our washroom.

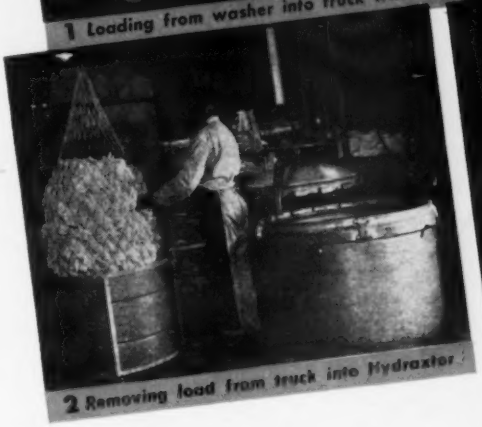
Very truly yours

CRIB DIAPER SERVICE, INC.

ABA:ht

By: A. B. Aurbach, Manager

1 Loading from washer into truck with sling



2 Removing load from truck into Hydraxtor

3 Loading or unloading the Hydraxtor

- ✓ NO SPECIAL TRUCKS
- ✓ NO DANGER OF MOVING PARTS
- ✓ NO VIBRATION
- ✓ NO BALANCING
- ✓ NO RIPS AND TEARS
- ✓ NO HEAVY POWER REQUIREMENTS
- ✓ NO BOLTING OR FOUNDATION NECESSARY

Complete Operating Cycle is Only 6 to 12 Minutes — Including Loading and Unloading — Depending Upon Work Extracted

Deliveries Now!

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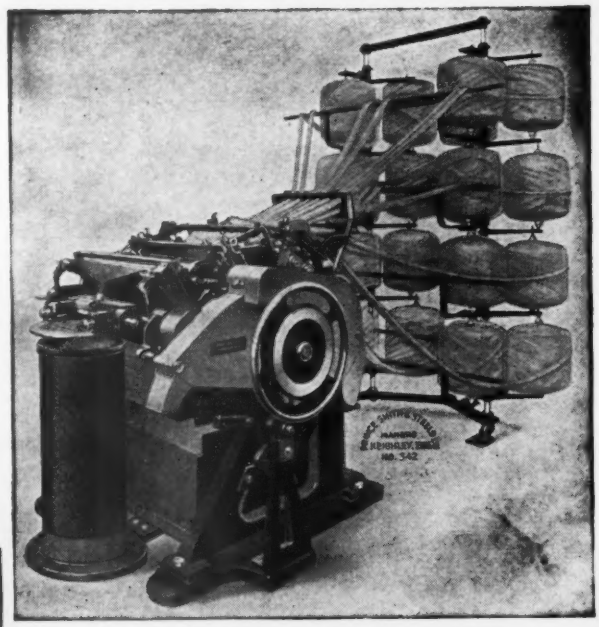
★ *Ease of accessibility and setting*
★ *Rigid construction*

features of



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THE *rectilinear* OR FRENCH COMB

for wool and other fibres

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Today's Maintenance Costs Ain't Hay . . . follow this Formula and keep 'em down

A. Use the right type valve for the service.
B. Place valves correctly in the line.
C. Choose Jenkins Valves for lifetime economy.
Cost Analysis
EQUIPMENT MAINTENANCE
COSTS

WITH THIS SIMPLE ABC formula, you can avoid needless valve maintenance costs . . . thereby aid management in its drive for economy. Records of thousands of valve users prove that it works.

By choosing Jenkins Valves, and treating them with reasonable care, you'll find that they'll serve far beyond the normal life expectancy of valves, even under hard and constant usage. What's more, you can call on Jenkins Valve Specialists for any help you need in selection and placement of valves for greatest efficiency.

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JENKINS VALVES

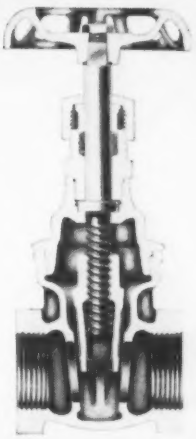
Types, Sizes, Pressures, Metals for Every Need

Sold Through Reliable Industrial Distributors Everywhere

JENKINS FIG. 370

Solid Wedge · Inside Screw · Non-Rising Spindle

BRONZE GATE VALVE



125 lbs. Steam

200 lbs. O.W.G.

This valve gives dependable service where full, free, unobstructed flow is required. For steam service especially, the solid wedge affords maximum resistance to pressure strains. Wedge design provides full thread engagement when valve is closed. When valve is fully opened, wedge entirely clears pathway. Extra stamina for extra service —spindle metal has tensile strength of 55,000 lbs. p.s.i.

ONE OF OVER 600 *EXTRA VALUE* VALVES MADE BY JENKINS *VALVE SPECIALISTS*

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FUMEX

THE FUME RESISTANT ENAMEL

INFORMATION FOR PLANT ENGINEERS

MOST RESISTANT—to alkali, acid and sulphide fumes (see proof on photographs).

•

INTERIOR SURFACES ONLY—for brick, concrete, plaster, wood, metal. Prime virgin or badly yellowed surfaces are treated first with Fumex Undercoater.

•

WHITE ONLY — Supplied in white only, semi-gloss finish. Never tinted with colors in oil.

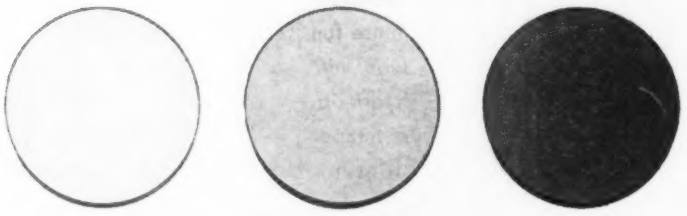
•

BRUSHING — Supplied in brushing consistency, works easily under the brush. Use turpentine thinners for spray application.

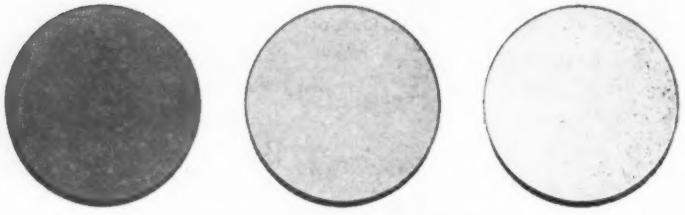
•

WASHABLE—and will not chip or flake when properly applied.

ACID ALKALI SULPHIDE



FUME RESISTING ENAMEL A



FUME RESISTING ENAMEL B

FUMEX

Discs were placed face down over beaker of concentrated Hydrochloric Acid for 24 hours.

Discs were placed face down over beaker of concentrated Ammonium Hydroxide for 24 hours.

Discs were placed face down over beaker of concentrated Ammonium Sulphide for 24 hours.

A POST-WAR TECHNICAL DEVELOPMENT OF IMPORTANCE TO YOUR INDUSTRY

FUMEX

A POLYMERIZED THERMOPLASTIC ELASTOMER
PRODUCED FROM AN OLEFINIC BASE

CONDENSED LABORATORY REPORT

procedure—Rectangular panels of seasoned pine painted with this material were subjected to dense fumes from boiling concentrated hydrochloric, sulphuric, nitric and acetic acids as well as warm ammonium hydroxide for 1 hour. Panels were also placed in the constant temperature oven at 103° C (217° F) for 24 hours, baking oven at 450° F for 5 hours, proof cabinet at 860° F for 5 days, beside the bread bakery oven for 6 months, over the doughnut room fat melting pan for 6 months, and also inside the bread bakery fermentation room for 6 months. A visual examination of the panels was then made.

results—Hydrochloric Acid Fumes—slight discoloration (bluish cast)
Sulphuric Acid Fumes—No apparent effect
Nitric Acid Fumes—Slight yellowish discoloration
Acetic Acid Fumes—No apparent effect
Ammonium Hydroxide Fumes—No apparent effect
Oven at 103° C (24 hrs.)—No apparent effect
Oven at 450° F (5 hrs.)—Pronounced decomposition of the wood occurred, resulting in a dark appearance to the panel. There was evidently no effect on the painted surface.

Proofing cabinet at 86° F (5 days)—No apparent effect

Beside bread bakery oven (6 months)—Surface developed yellowish film probably fat. Panel very dirty with heavy soot clinging to undersurface. Most of the yellowish film and all soot easily washed with soapy water.

Over doughnut room fat melting pan (6 months)—No discoloration to paint. Panel was quite dirty however. Dirt easily removed by warm water.

Bread Bakery fermentation room (6 months)—Slight yellowish film present. Panel very dirty. Dirt and most of yellowish film removed with warm water.

comment—Most dirt and grease accumulating over a period of time could be easily removed. This paint should withstand satisfactorily the operating conditions of a bakery, dairy, brewery, bleachery, textile mill, chemical plant, etc., etc.

WRITE FOR DETAILS OF THIS POST-WAR DEVELOPMENT TO

ESTABLISHED 1897 — HORN PRODUCT — 50th ANNIVERSARY

A. C. HORN COMPANY, INC.

Manufacturers of Materials for Building Maintenance and Construction

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SUBSIDIARY OF Sun CHEMICAL CORPORATION

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WAMSUTTA'S fame for quality is not accidental. It results from deliberate measures to assure a superior product. Important among these advantages is an AMCO Humidification and Cooling System.

By reducing excessive temperatures and holding humidity at correct levels—an easy routine with AMCO—ideal processing "weather" prevails in every department. Also important to efficient production is greater comfort for the worker.

Relative humidity is accurately maintained by introducing atomized water spray, and the frictional heat of high speed machines is absorbed by evaporation of this moisture in conjunction with carefully controlled air-flow. No expensive changes are necessary—no air ducts to install—no jump in maintenance costs.

What an AMCO System has done for many leading mills it can do for you. An AMCO engineer will gladly show you how you can modernize your plant simply and economically for better product quality with increased output.

FEATURES OF AMCO HUMIDIFICATION AND COOLING

- Reduces excessive temperature and holds relative humidity at point best suited to fibre and process.
- Speeds production in high friction (heat) areas.
- Assures evener yarn counts and increases breaking strength.
- Gradually increases regain for good roving and consequent better spinning.
- Drafting of fibres smoother and more compact.
- Waste and fly greatly reduced.
- No cumbersome ducts to require cleaning and obstruct light.
- Easier to install—minimum disruption.
- High flexibility to meet changing room conditions.
- Minimum maintenance.
- Amco Evaporative Cooling utilizes your present humidification system.
- Increases worker comfort.

AMCO

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synthetic detergent

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- assures highest quality in fabrics

may we advise you how igepon can solve your mill problem

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Kohorn Serves Around the World

With the sure knowledge of 35 years' experience Oscar Kohorn & Co., Ltd. is today carrying out the largest share of rayon plant construction and modernization.

For example, in South America a rayon yarn and staple fiber plant we are building is one of the largest ever constructed outside United States. In Egypt our project integrates the production of rayon yarn, staple fiber and transparent cellulose sheeting, and includes power, chemical and water plants. In Europe and Asia, Kohorn is supplying machinery and engineering to restore and expand existing plants.

We shoulder complete responsibility and guarantee results. Early deliveries of machinery are being maintained. We furnish staffs of our rayon experts to install and operate plants. — And nowhere else can you obtain engineering advice based on years and years of world-wide experience in rayon manufacturing. Consult us now without obligation.

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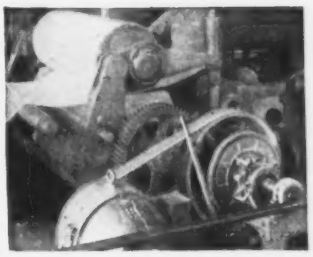
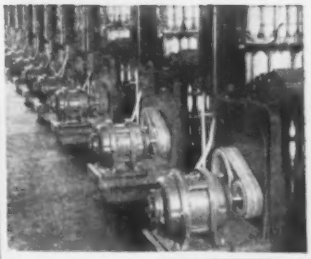
Gilmer BELTS

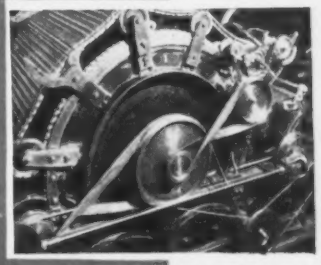
GILMER HAS THE PULL



Gilmer V-Belts—FHP and Multiple. Space saving, silent, shock absorbing. Built to lock in the grooves with a non-slip grip. In standard and special sizes.

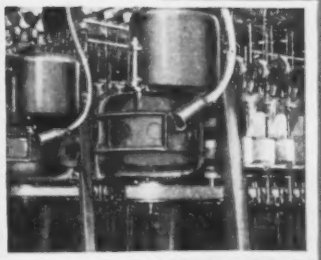
Gilmer Kable Kord Belts and Belting. Meet practically every fast, power belt need. "Two-belts-in-one"—contactor and power. Tight gripping, hard pulling, long wearing.

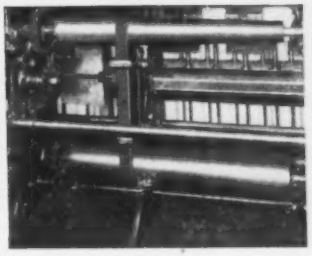




Gilmer Kable Kord Lickerin Belts. A contactor and power belt in one. Noted for exceptional grip, low stretch, small slippage and high tensile strength. Stand up long in service.

Gilmer Endless Cord Spinner Belts. Built with continuous cord construction to assure smooth and uniform spindle speed. A belt of high tensile strength, low stretch and long life.





Gilmer Cone Drive Belts. Reinforced cottide jacket edges and rubber-locked inner mat structure check wear and unraveling from the action of shifter forks. Assure longer life in the toughest service.

Gilmer has the right belt for every textile mill application

Whatever the drive or type of service, there is a Gilmer Belt specially designed to fit. There are Gilmer V-Belts, flat belts and round belts . . . endless and non-endless . . . heavy-duty power belts, high speed belts and many special types. And you can count on each for maximum gripping and pulling power, plus long wear and economy.

Gilmer specializes in belts. And from long and close association with the textile industry, Gilmer engineers have a thorough understanding of its exacting requirements. The service of these engineers is available to you without charge or obligation. You may feel free to consult them at any time regarding your power transmission problems.

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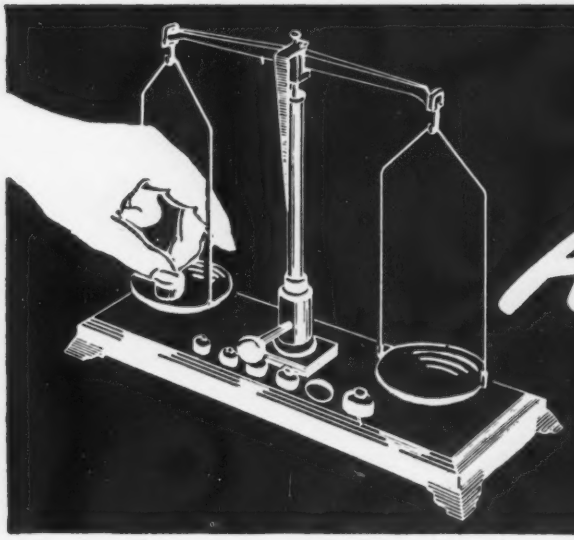

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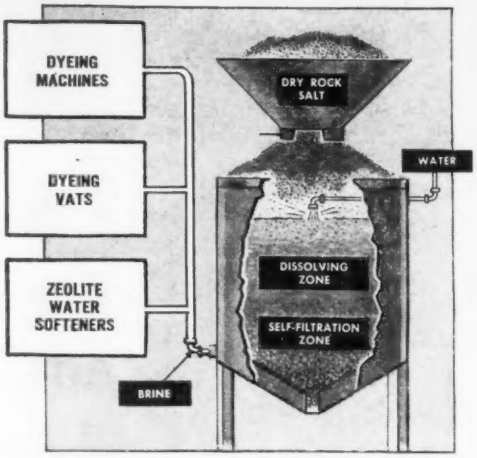
For Accurate Salt Measurement "PASS the SALT" BY LIXATOR

EVERY DYER knows that salt is a top-flight exhausting agent ... that it must be accurately measured to insure complete exhausting without waste ... and further that it must also be uniformly distributed in the dye bath to prevent spotting, streaking and white edges. The question is *how.*

With Lixate brine accurate salt measurement and uniform distribution are assured. For the Lixator automatically and continuously makes 100% saturated, crystal clear brine. Since each gallon of Lixate brine *always* contains 2.65 lbs. of salt—a definite volume of Lixate brine supplies a definite quantity of salt. The trouble and waste of measuring salt by hand or by mechanical devices, or of measuring by weight without regard to water absorption during storage, are things of the past. And added to the dye bath, salt, as brine, is immediately diluted and dispersed throughout.

Leading companies in your industry and many others are availing themselves of the Lixator's ability to measure salt accurately ... to reduce labor and handling costs and to improve the quality of their products. It will pay you to investigate the Lixate Process for making brine for your plant.

HOW THE LIXATOR WORKS



In the upper zone—Flowing through a bed of rock salt which is continuously replenished by gravity feed, water dissolves salt to form 100% saturated brine. **In the lower zone**—Through use of the self-filtration principle *originated by International*, the saturated brine is thoroughly filtered through a bed of undissolved rock salt. The rock salt itself filters the brine. Nothing else is needed.

WHAT THE LIXATOR PROVIDES

- ✓ **Chemical and bacterial purity to meet the most exacting standards for brine**
- ✓ **Unvarying salt content of 2.65 pounds per gallon of brine**
- ✓ **Crystal-clear brine**
- ✓ **Continuous supply of brine**
- ✓ **Automatic salt and water feed to Lixator**
- ✓ **Inexpensive, rapid distribution of brine to points of use by pump and piping**

Get the full story on why accurate salt measurement is *always* possible with Lixate brine. Send for your copy of our *free* pamphlet *today!*

INTERNATIONAL SALT COMPANY, INC., Dept. TW-6, Scranton, Pa.

Gentlemen:
Please mail absolutely free your pamphlet, "How Lixate Brine Solves the Problem of Accurate Salt Measurement."

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Reg. U. S. Pat. Off.
for making brine
INTERNATIONAL SALT COMPANY, INC.
Scranton, Pa.

Mass Lubrication for Mass Production

POSITIVE LUBRICATION in Seconds with Oil or Grease

SIMPLICITY and Economy of Installation

SALES OFFICES & ENGINEERING SERVICE from Coast-to-Coast

BULLETIN No. 801

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for MASS LUBRICATION

WITH SERIES SL-3 INJECTORS

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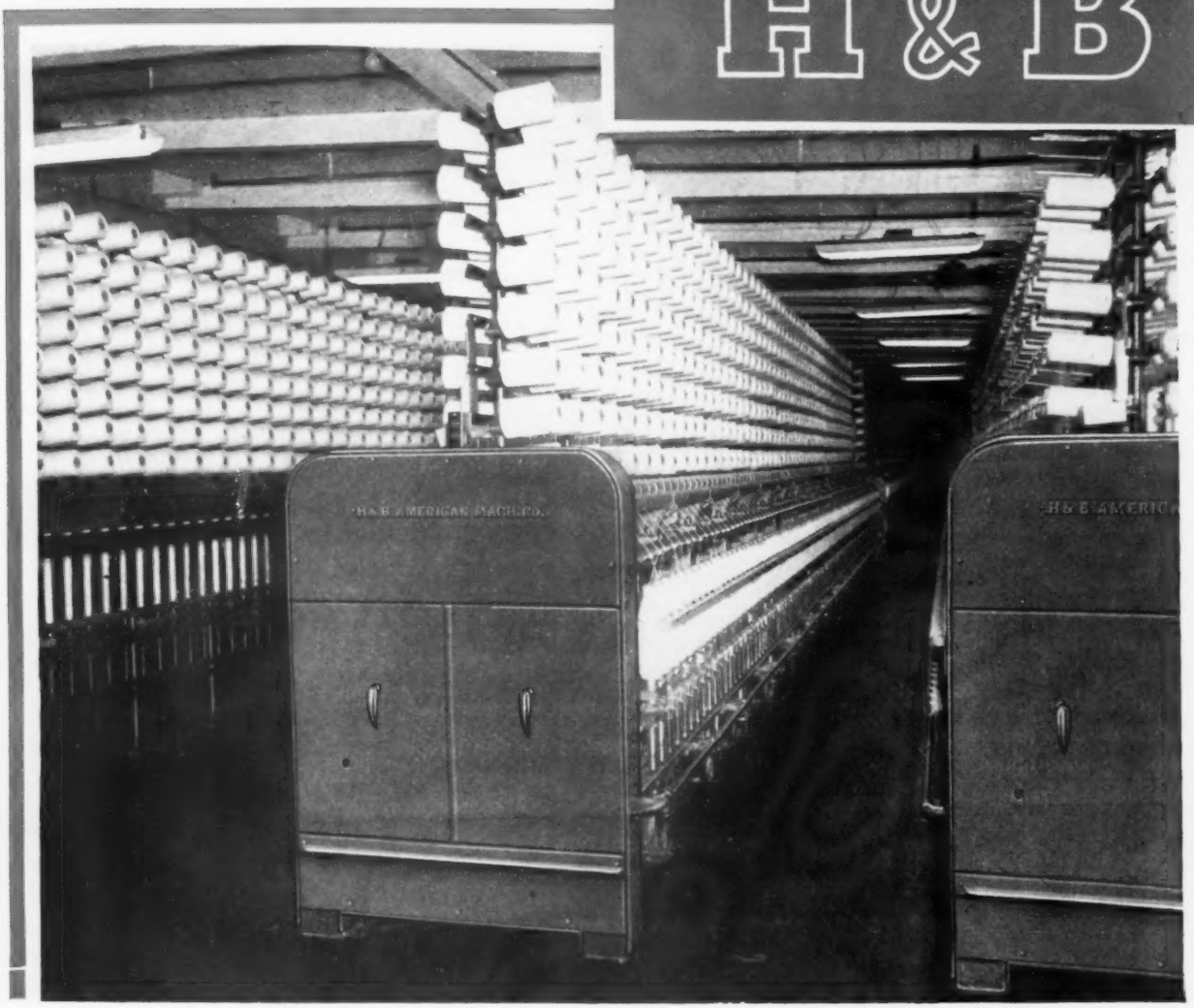
TW 847-8

H & B



H & B Twisters, built exactly to exact specifications, assure high quality finished yarn with an even twist. They deliver a well shaped, firm bobbin carrying the maximum yardage permissible within the natural limits imposed by traverse and ring diameter. Whether this twisted yarn is used for duck, high quality broadcloths, gabardines, tire cord or sewing thread, you can depend on H & B. Our engineering provides the right builder motion for trouble-free run-off on any type high speed winder, or in any other subsequent operation.

Additional features of H & B Twisters contribute to the quality of the twisted yarn and to the safety, ease and economy of operation of the machine. These are "the little things that make a big difference".

H & B AMERICAN

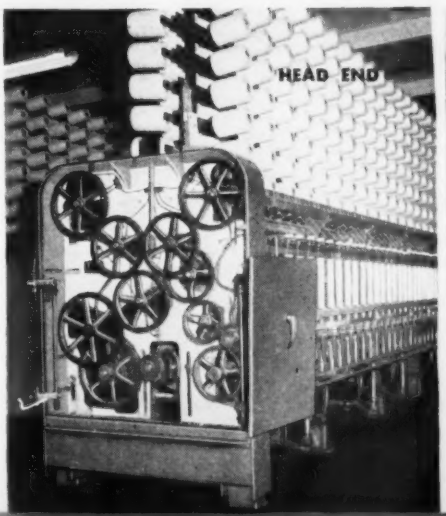
Builders of Modern

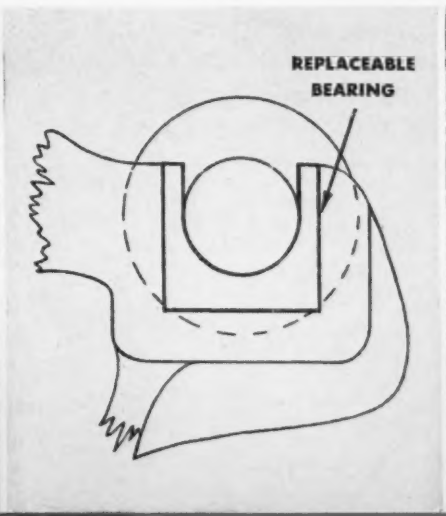
FACTORY, EXECUTIVE OFFICES AND EXPORT

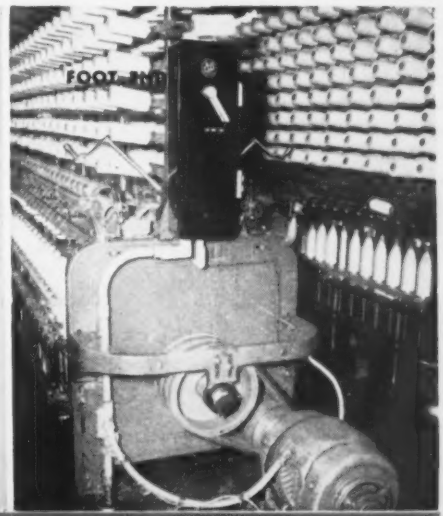
TWISTERS

IT'S THE LITTLE THINGS *that make a Big Difference*

1. A new type metallic traversing thread board that helps assure even yarn tension.
2. An anti-friction tension pulley that helps to maintain constant spindle speed.
3. Wet twisters are equipped with an automatic water feed control that keeps the same level in troughs, thus permitting even water penetration.
4. A ball bearing thrust washer in the builder drive that prevents dwelling at top and bottom of the stroke and particularly aids effective high speed winding.
5. An electric stop motion that prevents starting of machine when doors are open.
6. A silent chain drive from cylinder to jack shaft.
7. Replaceable bottom roll bearings to reduce maintenance cost.
8. Anti-friction bearings on cylinders that save power and maintenance.







MACHINE CO.

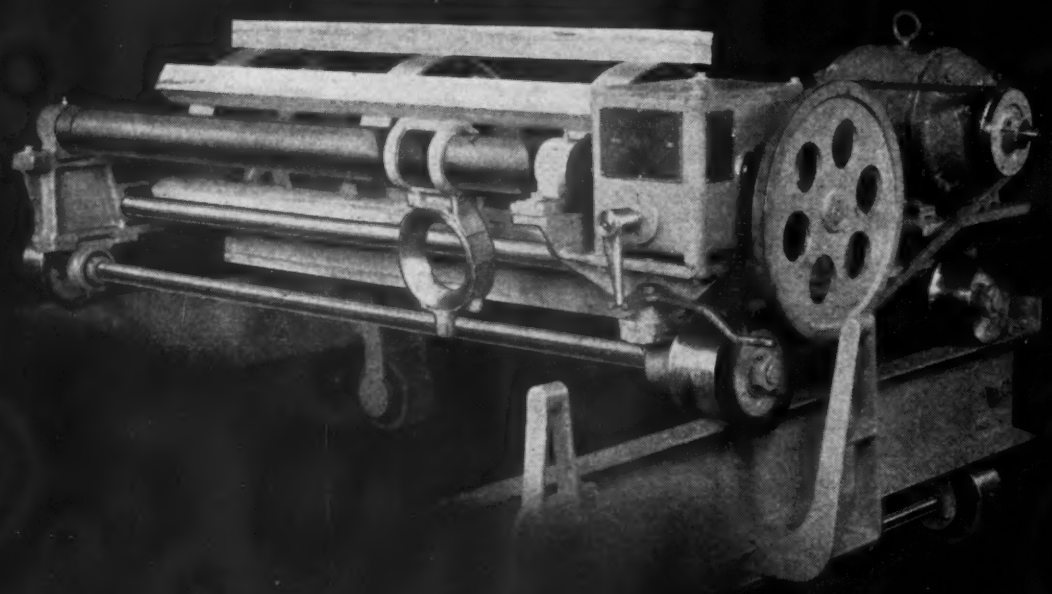
Textile Machinery

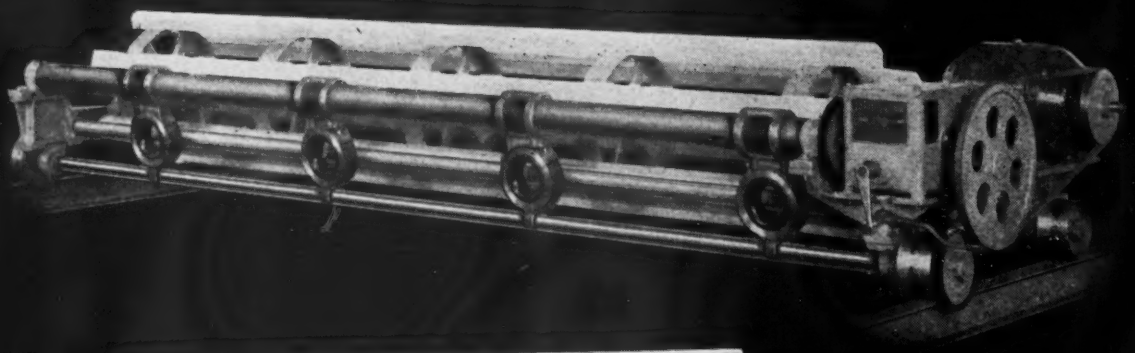
DIVISION PAWTUCKET, RHODE ISLAND, U.S.A.

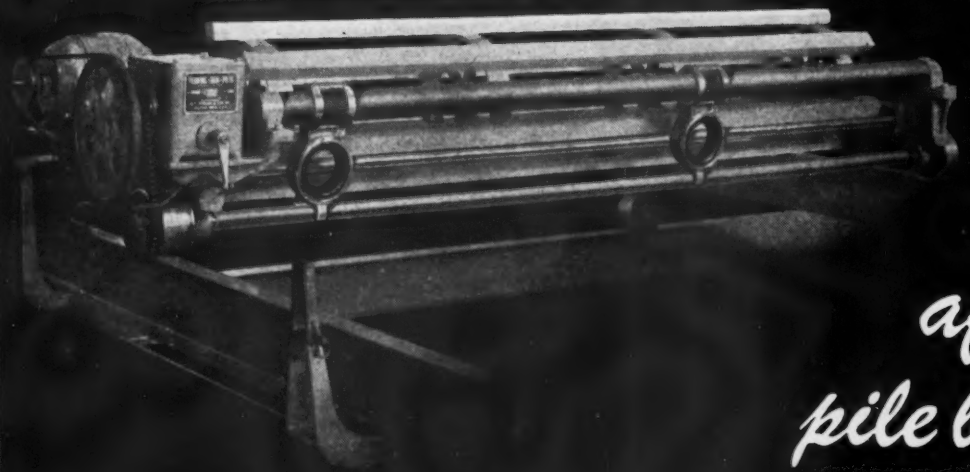
BRANCH OFFICES
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

PERKINS AUTOMATIC BIN PILERS

PATENTED







You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

Photo Courtesy of Van Vlaanderen Machine Company, Paterson, N. J.

Condor RUBBER-COVERED ROLLS

Shown above is a typical installation of Condor Rubber-Covered Batcher Rolls on new Van Vlaanderen tensionless jigs in one of the textile industry's largest dye houses. To match their best engineering improvements, many manufacturers rely on Manhattan's 50 years of experience for the most uniform and longest lasting rubber-covered rolls.

Some Manhattan installations of batcher rolls, for example, have served over a quarter century without ever being removed from the machine. The same quality goes into all Condor Rubber-Covered Rolls whether specifically designed for batcher, scutcher, slasher, padder, mercerizing or other equipment.

Manhattan's complete line of rubber products for the Textile Industry is consistently dependable—outstanding in quality. Make MANHATTAN your choice also for hose, belts, tank linings.

Roll-Covering Plants at Passaic, N. J. . . . Neenah, Wisc. . . . North Charleston, S. C.

RAYBESTOS R M MANHATTAN

RAYBESTOS-MANHATTAN INC.

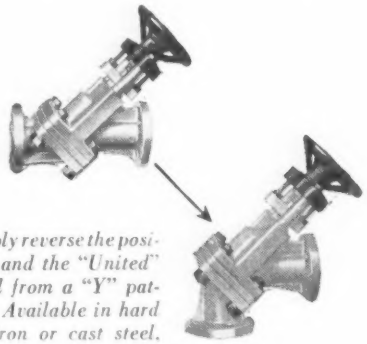
Keep Ahead with Manhattan

MANHATTAN RUBBER DIVISION **PASSAIC, NEW JERSEY**

Go "National" for Lead

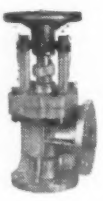
What kind of Acid Valve do you need?

1 "United" Type R Valve? This ingenious valve, recently introduced by National Lead, offers advantages unobtainable with valves whose body and seat are cast as an integral unit. Because of its split-body construction it can be installed either as a "Y" or Angle pattern. All you do is reverse the position of the body section, as shown in the illustrations below. Thus, your supply stock can be held to a minimum by standardizing on *one* valve with *two* uses. Another feature is the removable seat and plug disc. Both can be replaced easily at nominal cost. Finally, seat and plug can be supplied in any alloy or material you specify. For normal applications, the valve is furnished in three standard ways: 1. Lead plug disc and stem integral; 2. Removable lead plug disc; 3. Removable rubber plug disc.



Two valves in one! *Simply reverse the position of the body sections and the "United" Type R Valve is changed from a "Y" pattern to an Angle pattern. Available in hard lead or lead-lined cast iron or cast steel.*

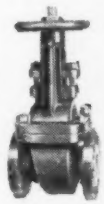
2 "United" Chem-Rayon Valve? This valve is manufactured in both "Y" and Angle design. The body is cast hard lead. Fins of the same metal reinforce and greatly increase the strength of body and flanges, while holding weight to a minimum. The stuffing box is of exceptional depth. Packing can be replaced under pressure. Steel and bronze bonnet are completely covered (except wheel and bushing) with hard lead. Available with removable plug discs of rubber or lead.



We also supply check, foot and diaphram valves in hard lead, cast iron, and cast steel lead lined.

3 "United" Type C Valve? The important difference between this type and the "United" Chem-Rayon valve is in the materials used for the body and bonnet. In the Type C valve these are made of cast carbon steel or cast iron heavily lined with lead. Furthermore, the body is cast oversize in order to allow a full flow area after lining. All parts of the two valves are interchangeable. Available in both "Y" and Angle patterns.

4 "United" Gate Pattern Valve? This is a most efficient gate valve, available with body and bonnet in hard lead, lead-lined cast steel or lead-lined cast iron. It is designed for use wherever an absolutely drip-proof acid valve is a "must." The seat is hard lead, cast integral with the body lining. This valve can be furnished with disc made of acid-resisting rubber, bakelite, or special alloys as required. You get a satisfactory seal at all times.



No Matter what Your Acid-handling Problem . . .

Go "National" for Lead

National Lead is ready to consult with you and supply any type of lead pipe . . . valves . . . sheet . . . lead-lined or lead-covered equipment . . . even complete acid recovery plants. And behind every National Lead product, every National Lead recommendation, are years of experience and many important installations in every field handling corrosive liquids and gases.

NATIONAL LEAD COMPANY

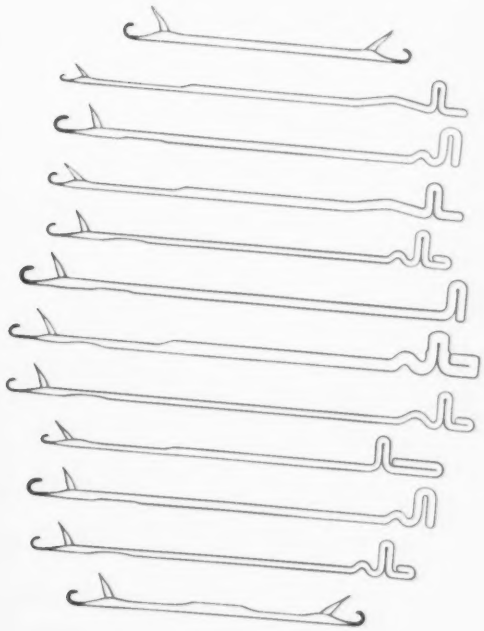
111 BROADWAY, NEW YORK 6, N. Y.

Offices and Plants in Principal Cities and Canada

know your NEEDLES *for* MEN'S OUTERWEAR

MANY TYPES of needles are used in knitting fabrics for overcoats, sport jackets, shirts, and sweaters—from fine needles for almost invisible stitches to needles for the toughest, most durable work. Torrington makes them *all*—a few of the most commonly used are illustrated below.

The Torrington line, in fact, contains the *right* needle for *every* type of work. And every Torrington Needle is machine-made and machine-tested... each has the strength, temper, finish and accuracy of dimensions for which Torrington Needles have long been famous.



THE TORRINGTON COMPANY

Torrington, Conn., U. S. A. • Established 1866

Branches: New York • Philadelphia • Chicago • Greensboro, N. C. Boston • St. Louis • Toronto, Canada • *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Avenue, Los Angeles 37, Calif.

There's a **TORRINGTON** LATCH NEEDLE for every type of Knitting!

Tremendous load capacity...

is gained in heavy-duty trailers through the use of many closely spaced wheels, and is similarly secured in Torrington Needle Bearings

Through greater rolling contact surface.

Needle Bearings have a greater bearing contact surface because of the full complement of rollers. Consequently, they have a higher radial capacity than any other anti-friction bearing of comparable size.

In addition, these compact, high-capacity bearings are easily installed . . . retain lubricant efficiently . . . are low in cost. Let us help you secure their many advantages for your product.

THE TORRINGTON COMPANY

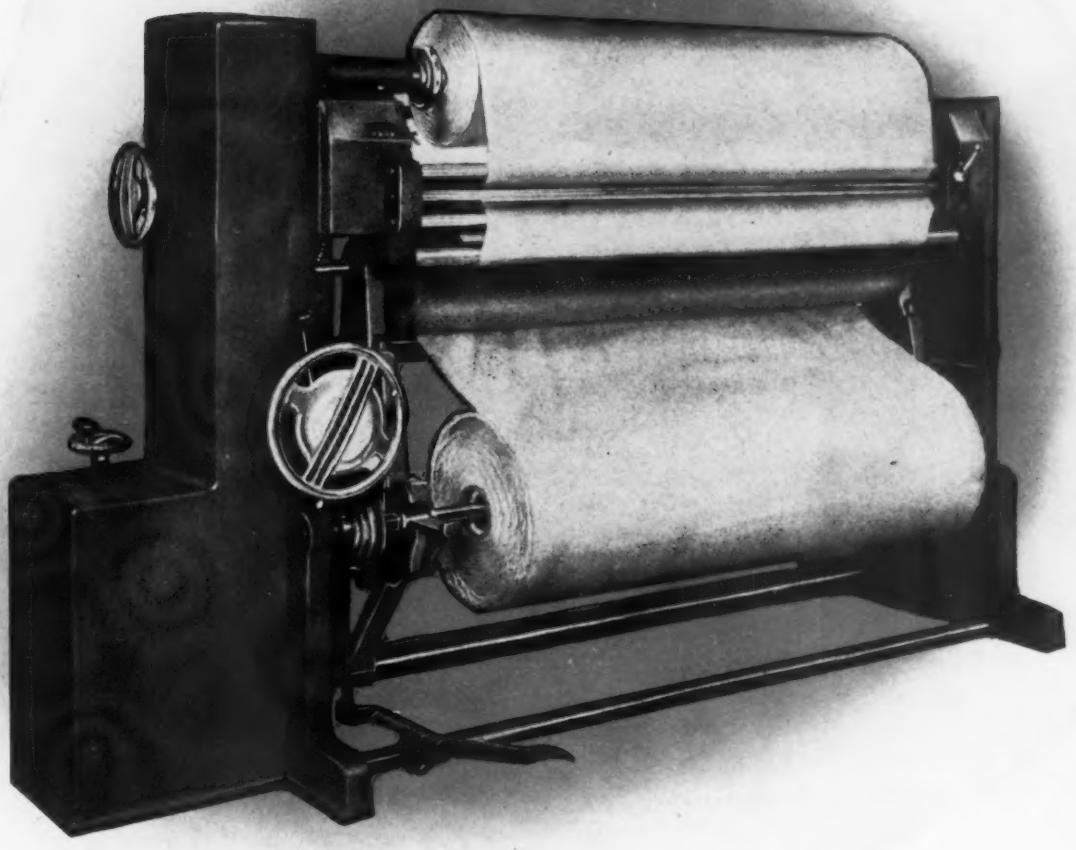
TORRINGTON, CONN. SOUTH BEND 21, INDIANA

Offices in All Principal Cities

TORRINGTON BEARINGS

• NEEDLE • SPHERICAL ROLLER • STRAIGHT ROLLER • TAPERED ROLLER • BALL •

ONE OF VAN VLAANDEREN'S COMPLETE LINE OF MACHINES



TIME TESTED, NOW EVEN BETTER

This Van Vlaanderen Tubing Machine has done excellent work through the war years. Now it has been improved to process up to 250 yards a minute and to take larger diameter rolls on tubes.

Operation of the machine is through mechanical controls within easy reach of the operator. Cloth speed is constant and measuring is accurate and dependable. Ball bearings are used throughout. Motor and 1-3 variable speed drive. Lubricated parts are sealed in oil.

VAN VLAANDEREN MACHINE COMPANY

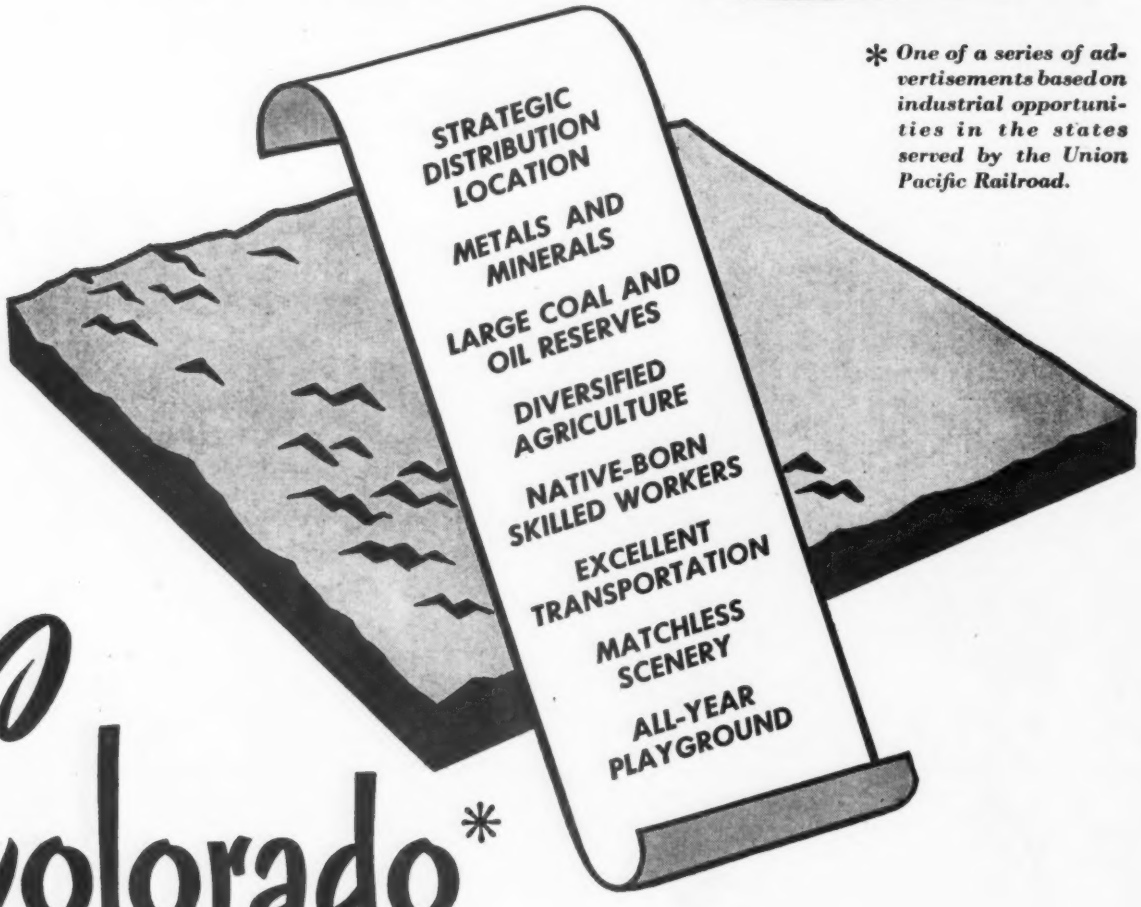
370 Straight St., Paterson 3, New Jersey

World's largest manufacturer of machines for processing modern fabrics

UNION PACIFIC

TREASURE MAP OF INDUSTRY

* *One of a series of advertisements based on industrial opportunities in the states served by the Union Pacific Railroad.*



Colorado*

Colorado offers industry many desirable sites for manufacture, distribution, warehousing, and other purposes. It is strategically located for national distribution.

Diversified agricultural products are of high quality due to favorable climate and soil.

More than 250 useful metallic and non-metallic minerals and compounds have been found, including precious uranium. Timber, oil and coal are practically unlimited.

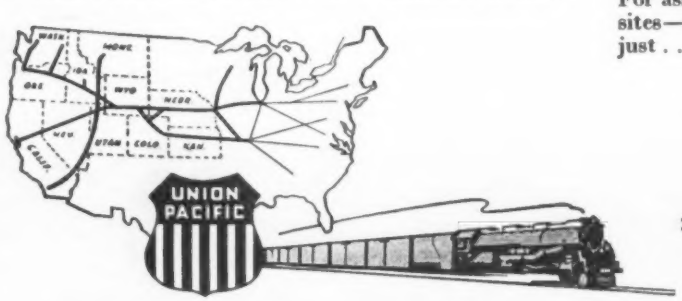
Native-born skilled labor, and a healthful climate resulting in fewer "time-outs" assure economical production.

Colorado provides sound state economy, modern educational and cultural facilities.

Thousands of vacationists enjoy its mountainous splendor, cool summer breezes and winter sports.

Union Pacific provides Colorado with unexcelled freight and passenger transportation. Every night, over night Streamliner service between Denver-Chicago . . . Denver-St. Louis.

For assistance in securing industrial and commercial sites—and for all-weather, dependable rail service, just . . .



be Specific – say "Union Pacific"

* *Address Industrial Department, Union Pacific Railroad, Omaha 2, Nebraska, for information regarding industrial sites.*

UNION PACIFIC RAILROAD

THE STRATEGIC MIDDLE ROUTE

REPUBLIC *Enduro* STAINLESS STEEL

Permits Fast Color Changeover

This modern yarn die vat is a typical example of the many applications of Republic ENDURO Stainless Steel in the textile field. Other applications include bleaching equipment, dry cans, tables, valves, reels, hosiery forms and many more.

Here's but one of the time-saving advantages of textile equipment made of lustrous, long-wearing Republic ENDURO Stainless Steel—the metal that's easy to clean and easy to keep clean.

With ENDURO dyeing equipment, you can change from dark to light shades in a hurry . . . no costly boiling-out period is required . . . and there's no danger of color carryover.

Sounds interesting? That's only part of the story. Get *all* of the facts about ENDURO's many money-saving applications in the textile industry by writing for a copy of Republic's new 20-page Booklet No. 444. It's FREE.

REPUBLIC STEEL CORPORATION
Alloy Steel Division • Massillon, Ohio
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Bldg., New York 17, N.Y.

Republic
REPUBLIC STEEL
REG. U. S. PAT. OFF.
ENDURO STAINLESS STEEL
Reg. U. S. Pat. Off.

Other Republic Products include Carbon and Alloy Steels—Pipe, Sheets, Strip, Plates, Bars, Wire, Pig Iron, Bolts and Nuts, Tubing

SMITH-DRUM...

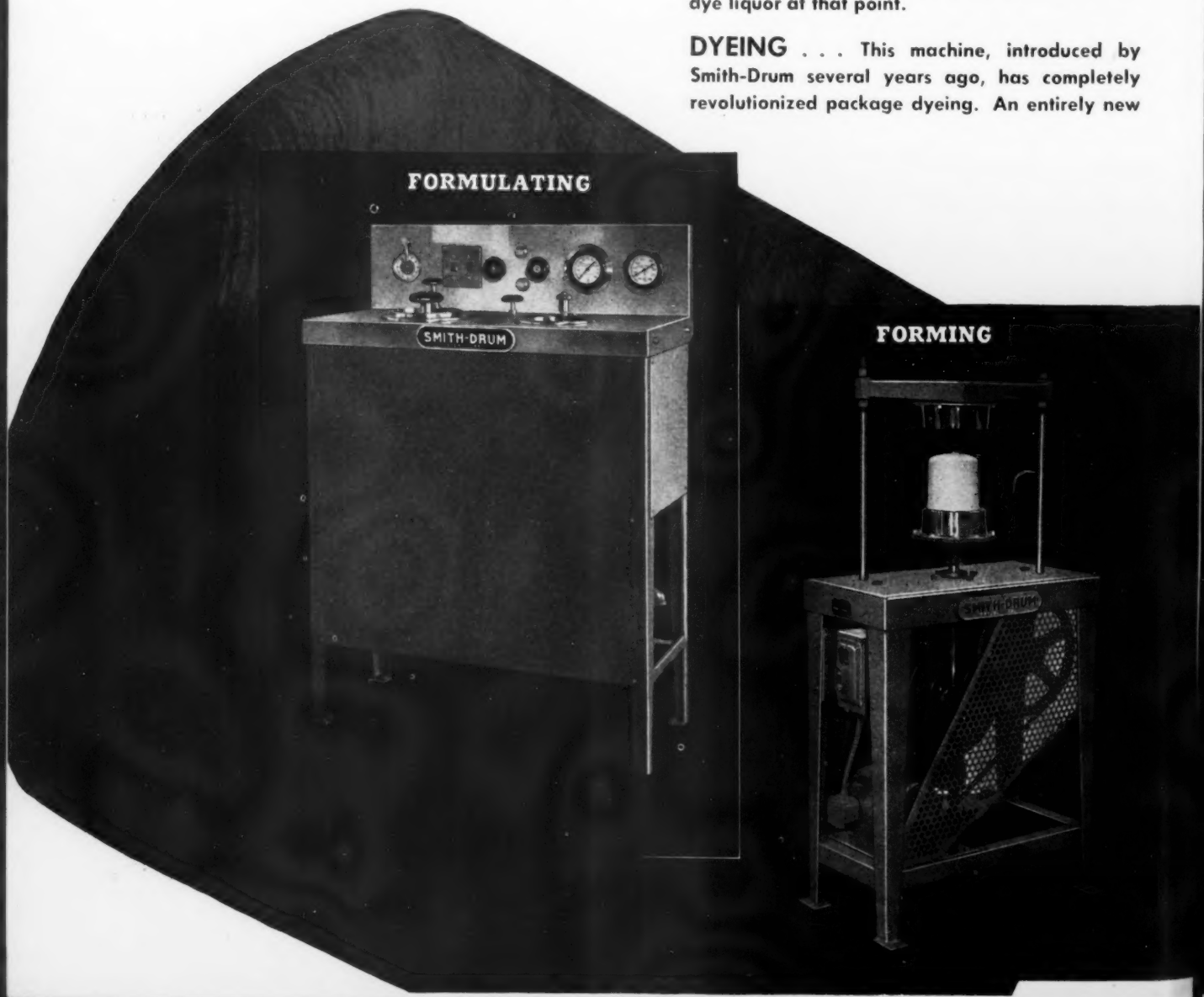
....OFFERS THE ONLY *SPECIFICALLY DESIGNED* TO HANDLE

Here, FOR THE FIRST TIME, is a completely integrated system especially designed for preparing, dyeing, extracting and drying yarn in package form. Each machine is the result of extensive research and experimentation to develop the best design for the specific purpose of handling packages . . . to eliminate the disadvantages of other types of machines and to provide many new advantages. This system results in faster, more uniform work . . . cuts costs . . . reduces labor.

FORMULATING . . . This machine dyes a single package and is designed for laboratory use in determining the approximate formula to be used in the larger batch machine. It provides more accurate control of the formula, because the sample is dyed under exactly the same conditions as the complete batch.

FORMING . . . This machine properly prepares the package for dyeing by crimping the edges of the package to aid penetration of the dye liquor at that point.

DYEING . . . This machine, introduced by Smith-Drum several years ago, has completely revolutionized package dyeing. An entirely new



Complete System

YARN IN PACKAGE FORM

type of package carrier and a radical departure in spindle design reduce resistance to flow, providing much greater flow of liquor through each package than the conventional types of machines. This greatly increases the speed of dyeing and improves uniformity of results.

EXTRACTING . . . This brand-new Smith-Drum machine extracts packages in 70 seconds running time. The degree of extraction is equal to a high-speed 48" conventional extractor. This means a big saving in both steam and electricity in the drying process. It also reduces labor costs by simplifying loading and unloading so that even a girl can operate it. Complete cycle, including loading and unloading, is only 2 minutes. The machine also reshapes the package and prevents crushing of dye tubes.

DRYING . . . Another new Smith-Drum development, employing a new principle in package drying. Cuts drying time as much as 75%. Production is approximately 300 to 350 packages per hour. It uses less electricity . . . prevents migration of color . . . eliminates salt deposits. Yarn is delivered in better condition because of short drying cycle. Drying is more uniform than by other methods.

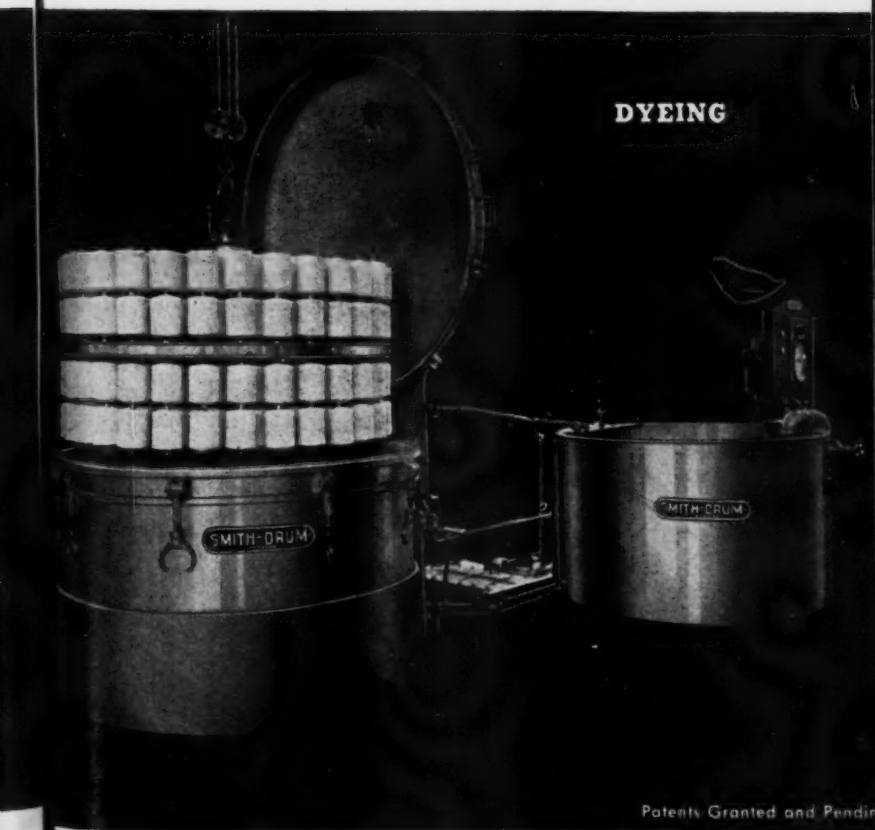
Patents Granted and Pending

Complete information on any or all of these machines will be sent to you promptly upon request.

SMITH, DRUM & COMPANY

Allegheny Ave. at 5th St., Philadelphia 33, Pa.

Patents Applied For



Patents Granted and Pending

OVER 1,000,000

MEADOWS PRECISION BALL BEARING APPLICATIONS

HAVE BEEN USED

IN THE PAST FOURTEEN YEARS

•

OVER 4,000,000

spindles are now maintained at uniform speed with MEADOWS Precision Ball Bearing Tension Pulleys

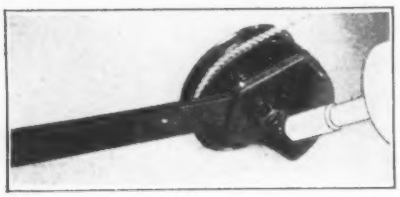
Representatives

JAMES P. COLEMAN, P. O. Box 1351, Greenville, S. C.

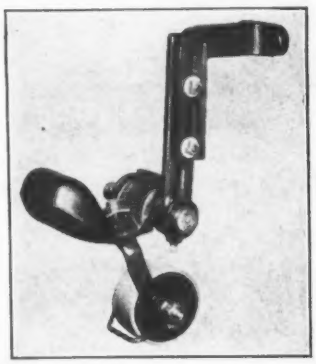
WALTER S. COLEMAN, P. O. Box 722, Salisbury, N. C.

MATTHEWS EQUIPMENT CO., 93-A Broadway, Providence, R. I.

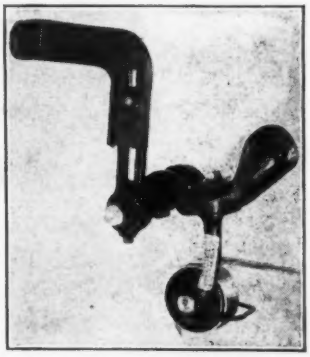
4-Spindle Band Drive



Tape Drive—Twisting

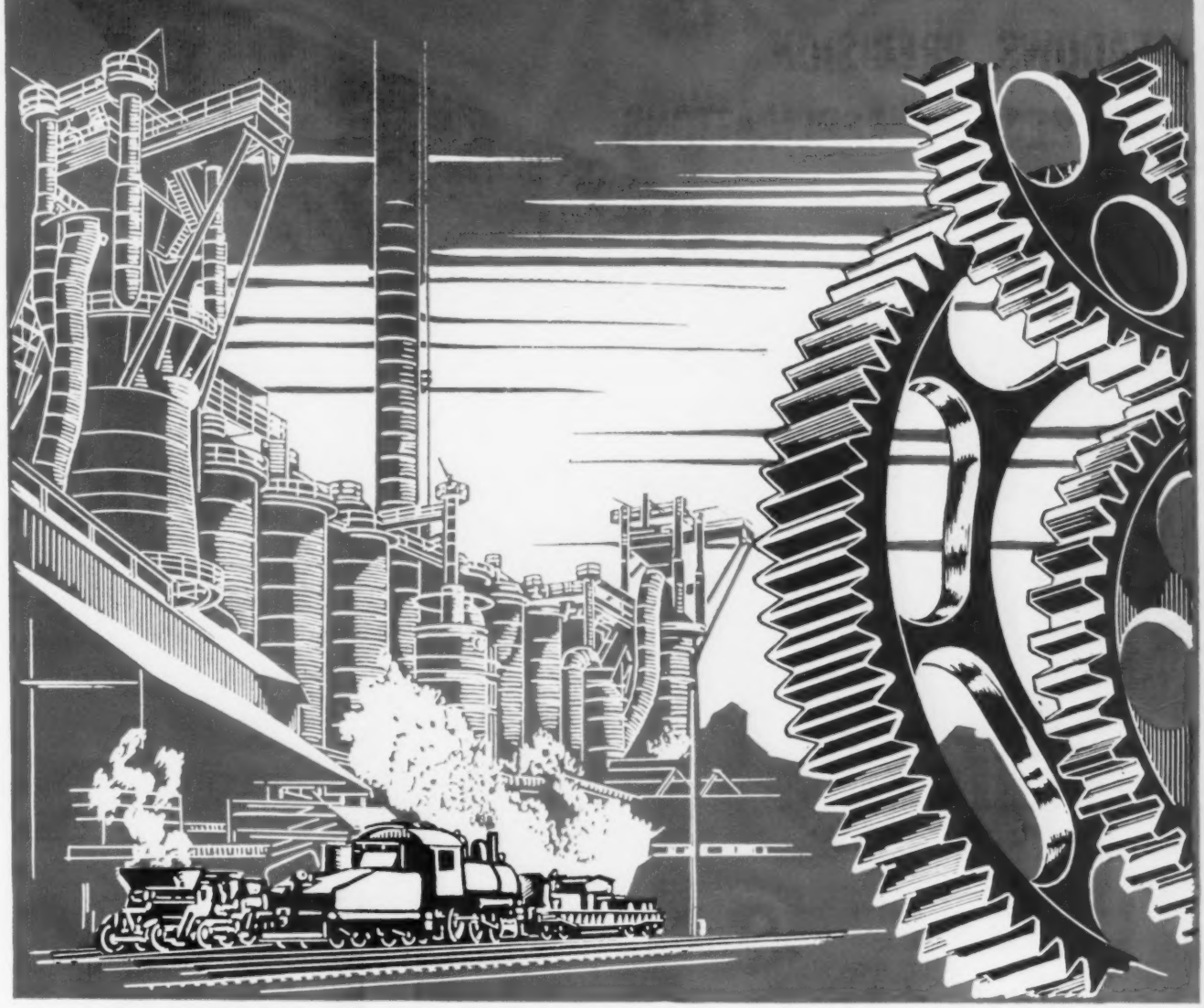


Tape Drive—Spinning



MEADOWS MANUFACTURING CO. · ATLANTA, GA.

TYCOL ENGINEERED LUBRICATION



cuts "down time" . . . increases production

TYCOL
INDUSTRIAL LUBRICANTS

**Boston • Charlotte, N. C.
Chicago • Detroit
Pittsburgh • Philadelphia
Tulsa**

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE • NEW YORK 4, N. Y.

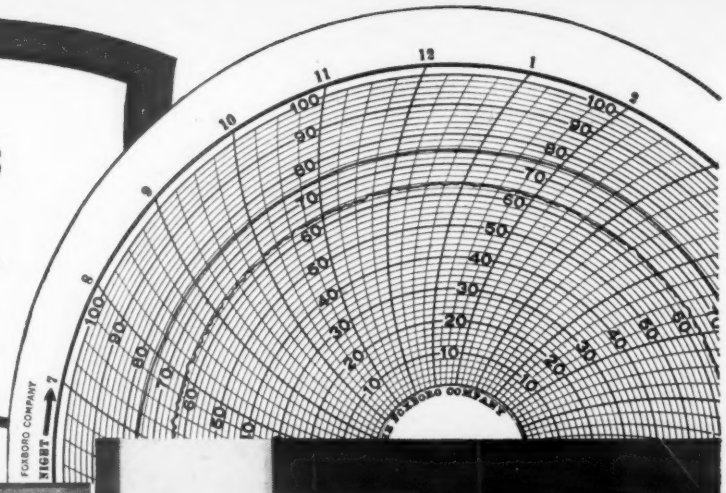
Under all conditions the proved performance of Tycol lubricants more than meets their recommended service.

Rigidly controlled and tested during manufacture, Tycol oils and greases retain their uniformity within each classification — from the first drain to the last. This unvarying high quality accounts for Tycol's wide acceptance among operators interested in cutting down time . . . top efficiency . . . increased production.

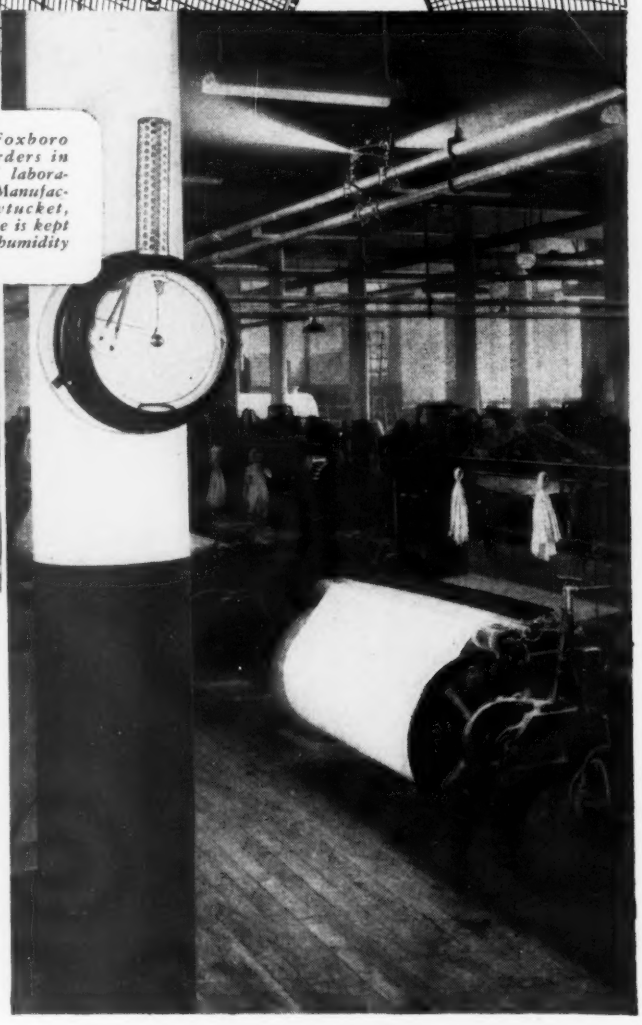
Whatever your lubrication need, there's a Tycol oil or grease *scientifically engineered* to afford greater economy . . . longer machine life for every piece, and type of equipment. Let Tide Water Associated help you select the best lubricant for your particular need. Write your nearest Tide Water Associated Office for full details.

LUBRICATION—"ENGINEERED TO FIT THE JOB"

How Humidity Records Save the Crown Mfg. Co. Trouble and Expense —



Installations of Foxboro Humidity Recorders in weave room and laboratory of Crown Manufacturing Co., Pawtucket, R. I. Temperature is kept at about 75° and humidity at 63%-64%.



THE CROWN MANUFACTURING COMPANY is one of many leading textile organizations that depend upon Foxboro Humidity and Temperature Recorders for a continuous, accurate record of mill conditions.

Records of humidity and temperature in the weave and spinning rooms of the Crown Mfg. Co. are examined daily, and corrective measures taken when needed to maintain correct atmospheric conditions. The charts are then filed for future reference in the laboratory to help establish reasons for any breaks, kinks, or neps that show up on the inspection table.

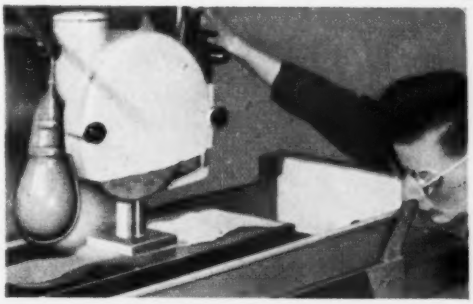
Ideal humidity conditions are closer to being realized than ever before, yet upsets caused by sudden changes in weather or excessive door openings, haunt mill operators. They can be traced and identified easily when daily records are maintained.

With Foxboro Humidity and Temperature Recorders, you get instruments that are simple, rugged, accurate . . . engineered by men who know the requirements of the textile industry. Their low-maintenance, long-life performance means *lowest overall cost.* Write for Bulletin 188-5. **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass.** Branches in principal cities.

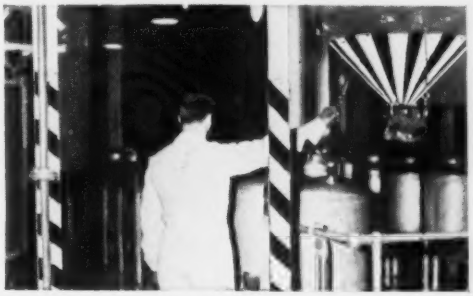
FOXBORO REG. U. S. PAT. OFF. **HUMIDITY** INDICATORS RECORDERS CONTROLLERS

Du Pont Color Conditioning helps employees

- SEE BETTER
- FEEL BETTER
- WORK BETTER

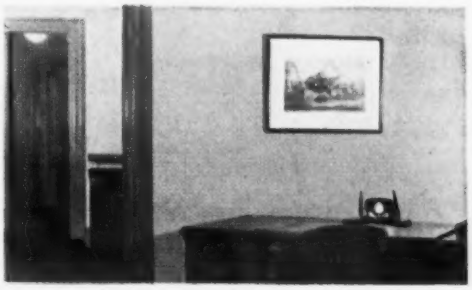


VISIBILITY. You will find comfortable seeing wherever Color Conditioning is used. By reducing glare, providing the correct degree of "brightness" within the worker's field of vision, eyestrain is eliminated, fatigue minimized.



SAFETY. The Du Pont Safety Color Code helps prevent costly accidents. With color and symbols, it points out fire-protection and first-aid equipment and warns workers against accident hazards.

MORALE. Color can make employees more content in their environment. Color Conditioning in restrooms, washrooms, cafeterias, etc., makes your plant more cheerful, betters employee-management relations.



FOR EVERY INTERIOR. Color Conditioning can be applied to every part of your plant. Offices, corridors, stairways, all interiors can be painted to provide an overall atmosphere that is pleasant and efficient.

Boston Woven Hose and Rubber Co., Cambridge, Mass.

THE ADVANTAGES of Du Pont Color Conditioning have been confirmed in hundreds of industrial plants. This scientific plan contributes to the worker's efficiency, health, comfort, and morale. It improves the rate and quality of production, cuts maintenance costs. Color Conditioning helps workers see better, feel better, work better. Find out how this proved plan can help you in your plant. Send coupon below to E. I. du Pont de Nemours & Co. (Inc.), Finishes Div., Wilmington 98, Del.

DU PONT
REG. U.S. PAT. OFF.

Color Conditioning

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Send for the new 32-page book "Color Conditioning for Industry"

*Name*_____

*Firm*_____

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*City and State*_____

T6

BODY SIZE

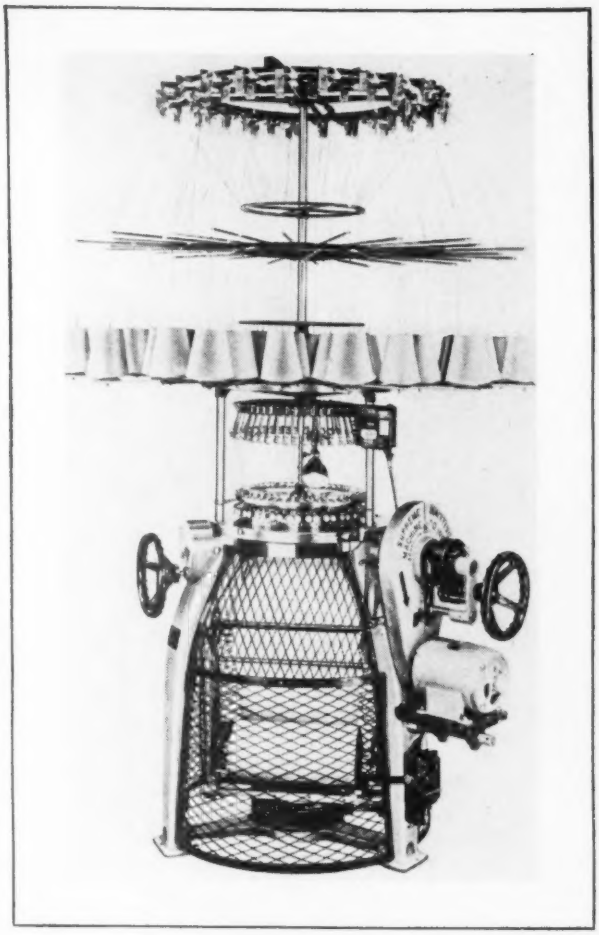
UNDERWEAR AND POLO SHIRTS

With

Supreme

Body Size

Model MJ



Supreme Body Size Model MJ eliminates slitting and sewing of side seams and matching of stripes on polo shirts and underwear. The planned Body Size comes right off the machine at the amazing rate of 100 yards an hour.

Let us help you select the proper Body Size Model MJ to knit the garment sizes in demand at your mill.

Dia.	Feeds
9"	28
10"	32
11"	34
12"	38
13"	40
14"	44
15"	48
16"	50
17"	54
18"	56

SUPREME

KNITTING MACHINE CO., Inc.

105 JOHNSON AVE., BROOKLYN 6, NEW YORK, N. Y.

BOTH THE *Yarn* AND THE *Spool* ...ALCOA ALUMINUM

The yarn is Dobeckmun's famous nontarnishing "Lurex", which takes full advantage of the mirror-like brilliance of highly finished Alcoa Aluminum Foil as a base for a new metallic yarn.

The spool, made by Lestershire Spool & Mfg. Co., is non-staining, corrosion-resistant Alcoa Aluminum—easy to handle, light to ship, as modern as the product it carries. ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA FIRST IN **ALUMINUM**

ALCOA ALUMINUM

IN EVERY COMMERCIAL FORM

Can you answer these questions about REPAIRING CAST IRON EQUIPMENT by welding?

Q. Is welding a practical way to repair cast iron equipment?

A. Yes, indeed. Welding saves American industry many thousands of dollars annually by keeping existing cast iron equipment in service.

Q. Is it harder to weld cast iron than steel or other metals?

A. Cast iron frequently proves more difficult to weld than other common metals. This is because of cast iron's tendency to change its structure under high heat.

Q. What is the effect of welding heat on cast iron?

A. Some of cast iron's useful properties depend on a proper balance between graphitic and combined carbon. When cast iron is reheated to the molten state, as in welding, some of the graphitic carbon recombines with iron to form combined carbon. Unless the iron cools gradually, the carbides thus formed remain as combined carbon. An excessive amount of combined carbon in cast iron makes the iron hard and extremely difficult to machine.

Q. How can this tendency be eliminated?

A. First, by avoiding excessive heat in the welding zone. Second, by obtaining a slow rate of cooling. Third, by choosing the right welding material.

Q. What is the best method of welding cast iron?

A. All have their advantages. For years, oxy-acetylene was the favorite. Now, however, because of recent improvements in electrode composition, the metal-arc method is coming rapidly to the fore.

Q. What are these improvements in electrode composition?

A. Research on electrodes for welding cast iron has centered around achieving strong, machinable welds, free from cracks and porosity. At INCO this has meant the careful study of the materials used for core wire and flux coatings in the development of the NI-ROD* electrode.

Q. Does NI-ROD provide sound, strong, welds?

A. Extensive use has proved the soundness of NI-ROD welds. NI-ROD's slag does an excellent job of scavenging gas from the weld metal, assuring deposits of maximum strength and freedom from porosity.

Q. Is preheating necessary with NI-ROD?

A. NI-ROD flows so well and "washes" so evenly against the sides of the joint that it is usually unnecessary to preheat the joint. However, hard-and-fast rules cannot be formulated to cover all conditions. Preheating to 300-400°F is useful on many jobs to reduce stresses or provide the highest degree of machinability.

Q. Are NI-ROD welds easily machinable?

A. Yes, NI-ROD's deposit and weld zone are easily machinable. The deposit is nickel, a metal which doesn't lose its machining characteristics under rapid temperature changes. The fusion zone retains its machinability because NI-ROD's smooth arcing and flow characteristics keep the heating-quenching cycle to a minimum.

•

NI-ROD comes in $\frac{3}{32}$", $\frac{1}{8}$", $\frac{5}{32}$" and $\frac{3}{16}$" diameters. Order a 5-lb. package and you'll agree it's the ideal answer to any cast iron welding problem where strong, sound, machinable joints are required. *Reg. U. S. Pat. Off.

INCO NI-ROD TRADE MARK

Be sure to ask for your copy of the NI-ROD instruction booklet.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall Street, New York 5, N.Y.

NI-ROD *is distributed by:*

WHITEHEAD METAL PRODUCTS COMPANY, INC.
WILLIAMS AND COMPANY, INC.
STEEL SALES CORP.
HENDRIE & BOLTHOFF MFG. & SUPPLY CO.
PACIFIC METALS COMPANY, LTD.
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EAGLE METALS CO.
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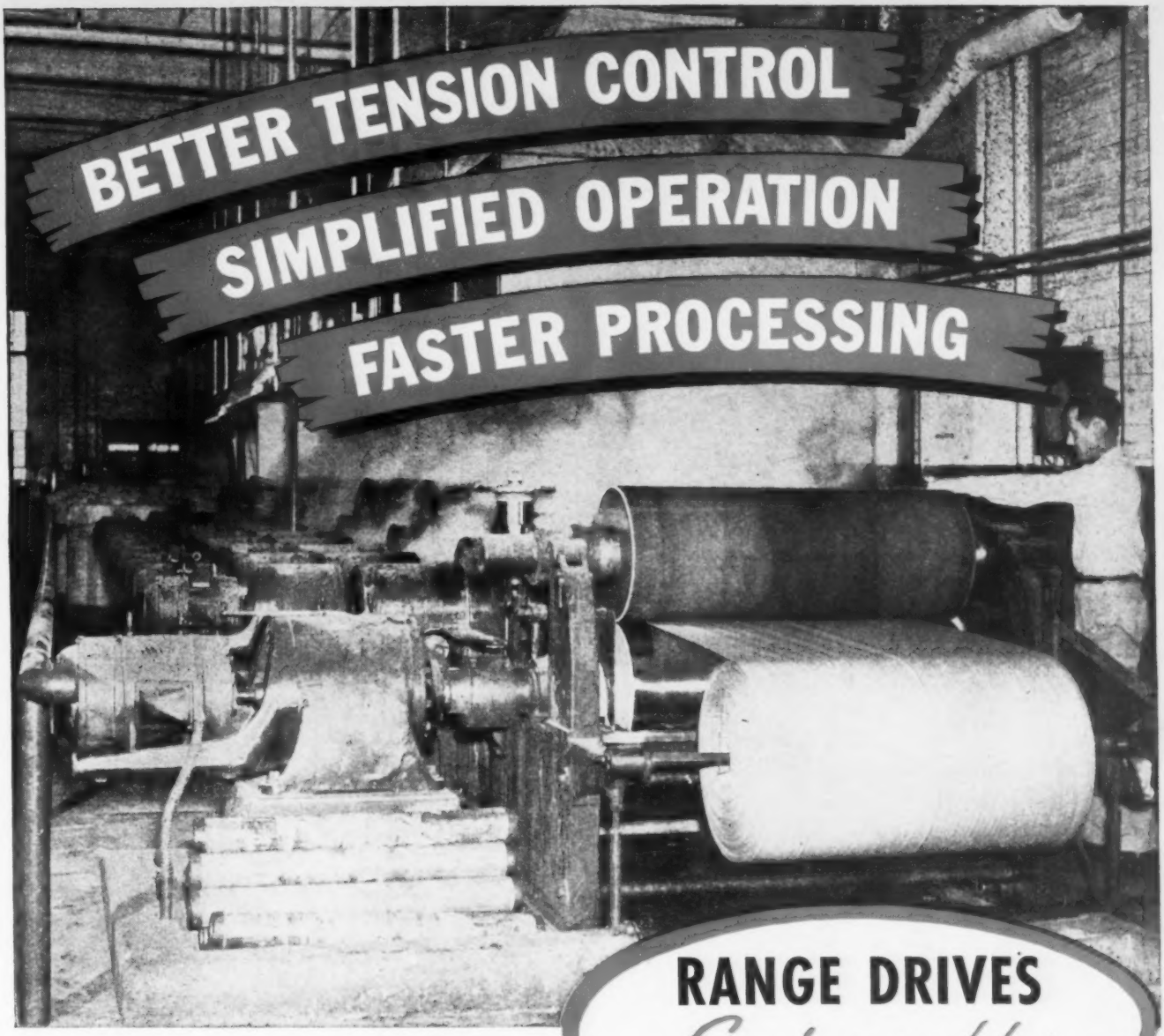
ALLOY METAL SALES, LTD.
WILKINSON COMPANY, LTD.
METAL & THERMIT CORPORATION
HOLLUP CORPORATION
NATIONAL CYLINDER GAS COMPANY



Eleven Reliance A-c. Motors operate this progressive boil-off range. Totally enclosed and fan-cooled, these rugged motors have special dye house insulation on windings as protection from caustic fumes.

RANGE DRIVES *Engineered by* RELIANCE

Whatever the specific operation involved, you will find the range drive planned by Reliance engineers offers important advantages. Better tension control and simplified operation result in faster, lower-cost processing. And your sturdy, protected Reliance Motors can be depended on for a long life of service with far less maintenance. There are motors and motor drives by Reliance for every need in industry. Consult a Reliance Engineer.

RELIANCE ELECTRIC & ENGINEERING CO.

1086 Ivanhoe Road **Cleveland 10, Ohio**

Appleton, Wis. • Birmingham • Boston • Buffalo • Chicago • Cincinnati
Dallas • Denver • Detroit • Gary • Grand Rapids • Greenville, S. C.
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New Orleans • New York • Philadelphia • Pittsburgh • Portland, Ore.
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RELIANCE A-C D-C MOTORS

"Motor-Drive is More Than Power"

KEY TO MORE

Unit Responsibility

Here's proof of the value of unit responsibility! This modern weave room produces the highest quality product . . . most efficiently. Westinghouse planned engineering provides individual drives and controls, uniform illumination, and Precipitron, the electronic air cleaner that provides clean, pure air.

"FROM OPENING TO FINISHING... ELECTRICAL AND POWER EQUIPMENT DESIGNED FOR EACH JOB"

The economical application of Westinghouse apparatus and electric power to textile mills has given the industry a new conception of speed, economy . . . *and* an improved product.

Whether it's a single motor drive, a complete power system, an individual lamp, or an entire lighting program . . . you need only contact one organization for your complete electrical requirements. From the start, Westinghouse has maintained a complete, separate Textile Department, staffed by competent engineers. These men are on the job full time producing better power equipment, and more efficient methods of applying, distributing, controlling and utilizing electric power for textile mills.

All this knowledge is yours for the asking . . . at Westinghouse. You'll get a speedy, accurate and simple solution to your textile problem.

Call your nearest Westinghouse office or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-94755

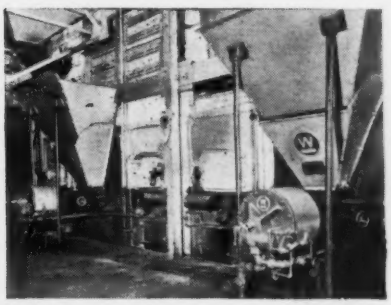
PRODUCTIVE POWER

"WESTINGHOUSE-EQUIPPED THROUGHOUT" MEANS SIMPLIFIED ORDERING, QUICKER INSTALLATION, MORE EFFICIENT OPERATION

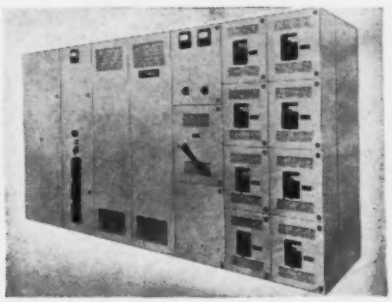
Putting power to work *productively* can be a major problem—or a simple one. When items must be selected, ordered and received from many sources, it means many chances for costly errors and delays . . . divided responsibility—or none at all—for performance of installed equipment.

Westinghouse offers the way to simplify the job. From equipment for generation of electrical or steam power, to the most specialized types of drives and control for its utilization, Westinghouse provides a single source of supply . . . one broad pair of shoulders competent to take responsibility for performance of all parts of the job.

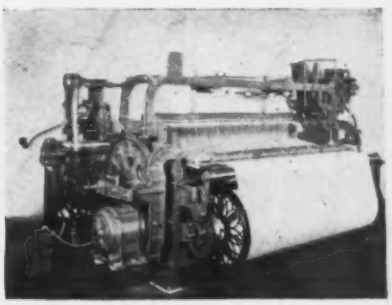
Here are a few of the places where Westinghouse unit responsibility prevents headaches . . . saves money . . . assures *more productive* power:



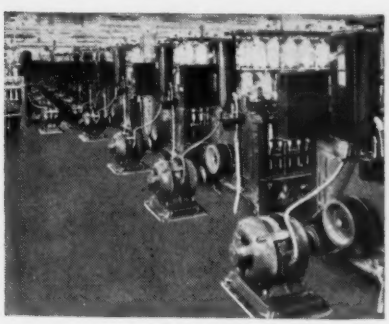
STOKERS—Ability to burn cheaper grades of fuel, and to eliminate smoke nuisance are two outstanding advantages of Westinghouse "Link-Grate" Stokers. These stokers fire the boilers supplying power and process steam in a New York textile mill.



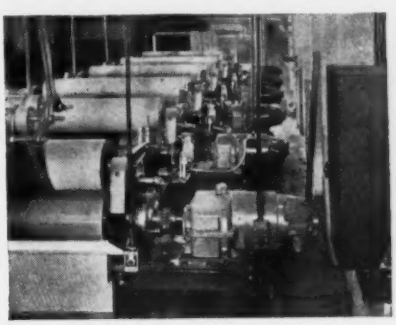
SWITCHGEAR—Westinghouse supplies a wide range of "Unitized" metal-clad switchgear that permits quick, economical installation. Unit shown contains a 750-kva air-cooled transformer, high-voltage metal-clad air breaker, and draw-out, low-voltage air circuit breakers.



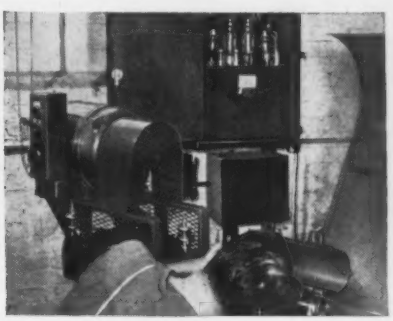
LOOM MOTORS—Westinghouse Loom Motors give maximum production with a minimum of power. Shown is a "weave room tested", specially-designed Westinghouse 1-1/2 hp loom motor driving a modern woolen and worsted loom.



LINT-FREE MOTORS—Installation of spinning frames, driven individually by Westinghouse Lint-Free Motors and controls. They're specially designed to provide the "cleanest running textile motor available".



GEARMOTORS—Westinghouse Gearmotors greatly facilitate the application of power for machines with slow-speed input shafts. Illustrated is a range drive, powered by Westinghouse Gearmotors.



MOT-O-TROL—This flexible electronic control solves any control problem requiring wide-range stepless speeds and close automatic regulation at all speeds and varying loads.

LIGHTING—Modern fluorescent lighting provides maximum "see-ability" in this textile mill. Westinghouse "planned lighting" is added proof of the value of single-source responsibility.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

MORE PRODUCTIVE POWER FOR INDUSTRY

Why LIQUON SODIUM ZEOLITE WATER SOFTENER is ideal for textile plants

Various methods have been developed to remove the hardness in water that interferes with many textile plant operations, such as washing, cleaning and dyeing.

A LIQUON Sodium Zeolite Water Softener is frequently the most advantageous external chemical method of softening such water. Here are the reasons:

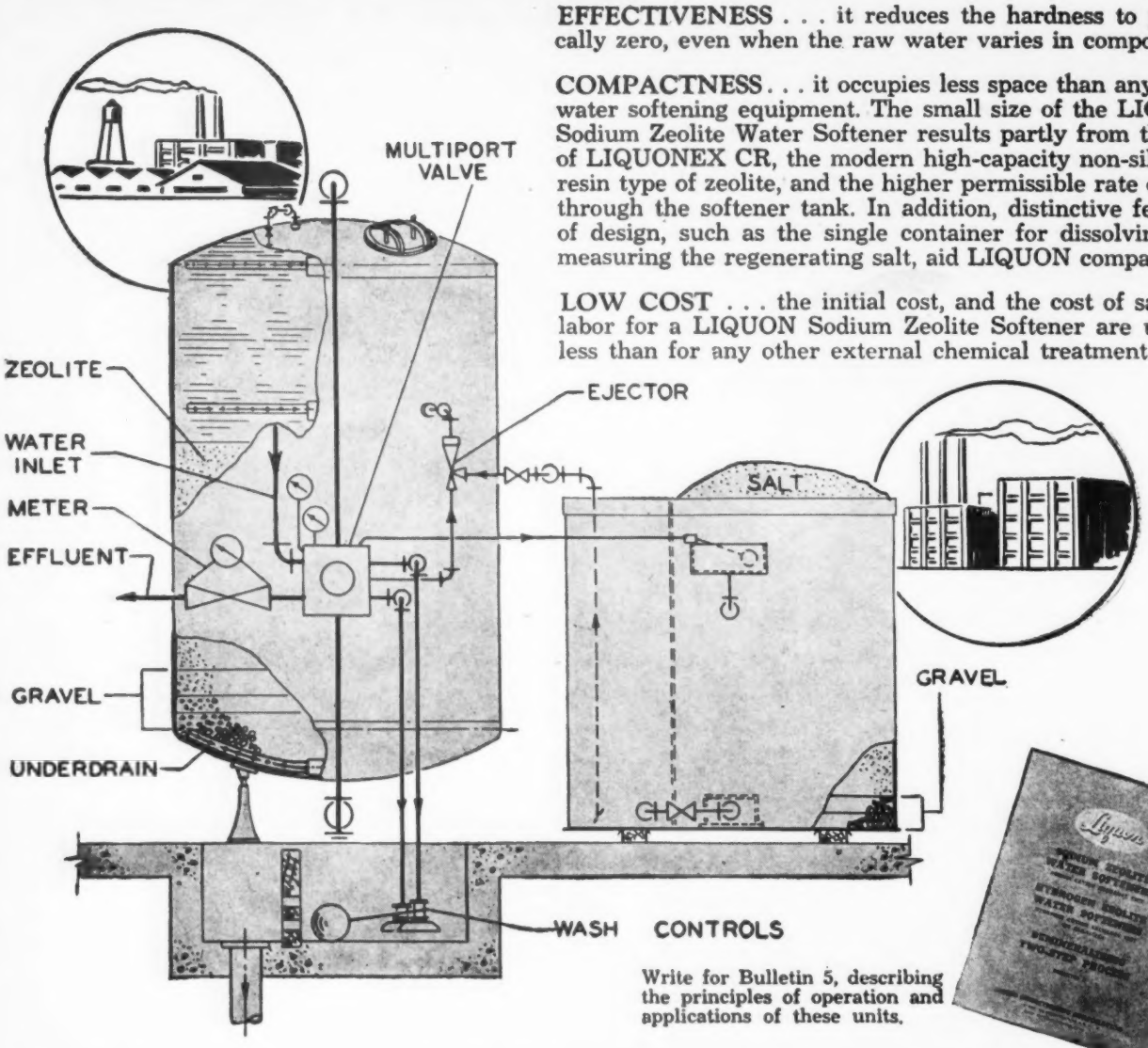
SIMPLICITY . . . it is the simplest method of removing hardness from a water supply . . . all operations are handled by one lever controlling a single efficient multiport valve.

EFFECTIVENESS . . . it reduces the hardness to practically zero, even when the raw water varies in composition.

COMPACTNESS . . . it occupies less space than any other water softening equipment. The small size of the LIQUON Sodium Zeolite Water Softener results partly from the use of LIQUONEX CR, the modern high-capacity non-siliceous resin type of zeolite, and the higher permissible rate of flow through the softener tank. In addition, distinctive features of design, such as the single container for dissolving and measuring the regenerating salt, aid LIQUON compactness.

LOW COST . . . the initial cost, and the cost of salt and labor for a LIQUON Sodium Zeolite Softener are usually less than for any other external chemical treatment.

LC-136



Write for Bulletin 5, describing the principles of operation and applications of these units.

LIQUID CONDITIONING CORPORATION

114 East Price Street, Linden, N. J. • *Engineering Service Representatives in Principal Cities*

Liquon

EVERY PROCESS...EVERY TYPE OF EQUIPMENT for Conditioning of Water and Other Liquids

BUSHINGS

PRECISION BRONZE BARS

BRONZE BEARINGS

Bunting Finished Bronze Bars and completely machined Standard Stock Bearings offer real economy in time, material, cost.

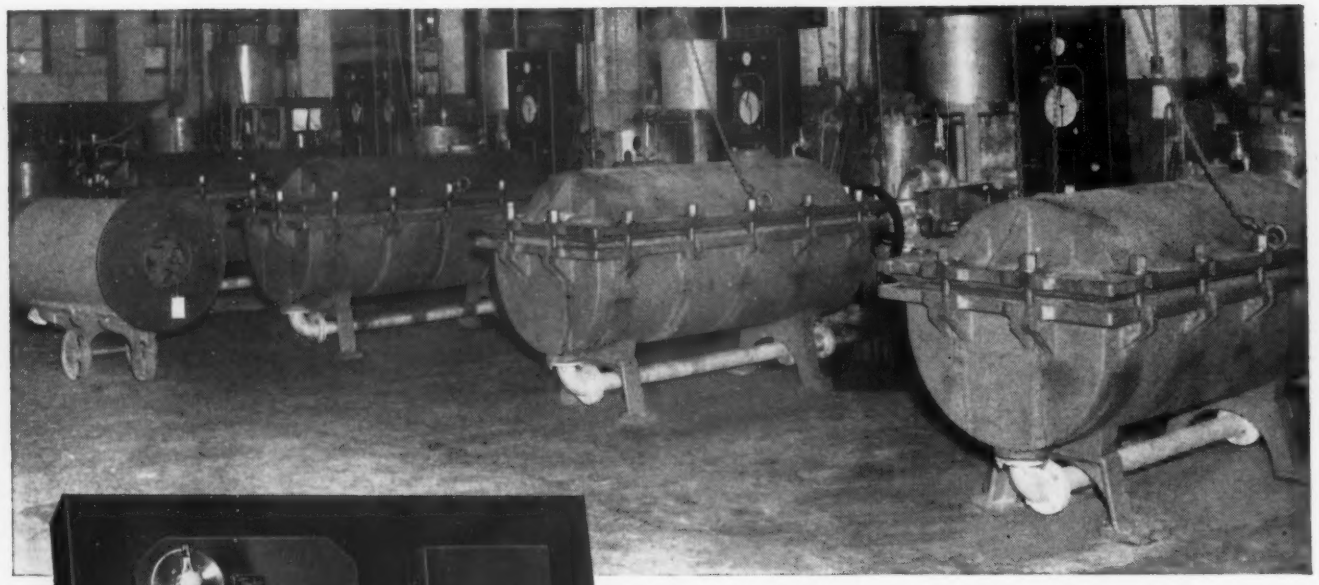
The leading distributor in your Community almost certainly is a Bunting Stock-carrying Distributor.

The Bunting Brass and Bronze Co., Toledo 9, Ohio.

Branches in Principal Cities.

Bunting

Taylor's on the "BEAM" in this Big Southern Cotton Mill!



STRICTLY top efficiency here! This battery of Taylor-equipped beam dyeing machines not only operates automatically—at minimum cost—but delivers more uniformly high quality than was ever possible with hand control. Instruments, mounted on a Taylor coordinated panel (insert), control each machine. The instrument equipment consists of:

1. A Fulscope Controller with Process Timer for automatic control of temperature and the time of the overall dyeing cycle.

2. A Flex-O-Timer which operates the dye liquor reversing valve, giving a specific inside-out and outside-in cycle. It precisely times flow reversal, thus assuring greater uniformity.

3. Signal Lights which let the operator see at a glance just what part of the cycle he's in. They also let him know the direction of flow at any time.

This beam dye control system is only one of many ways you can "beat rising costs with Taylor Accuracy." Whatever dyeing problems you have, we can help you solve them by working out an efficient Taylor Automatic Control System for you. Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Ontario.

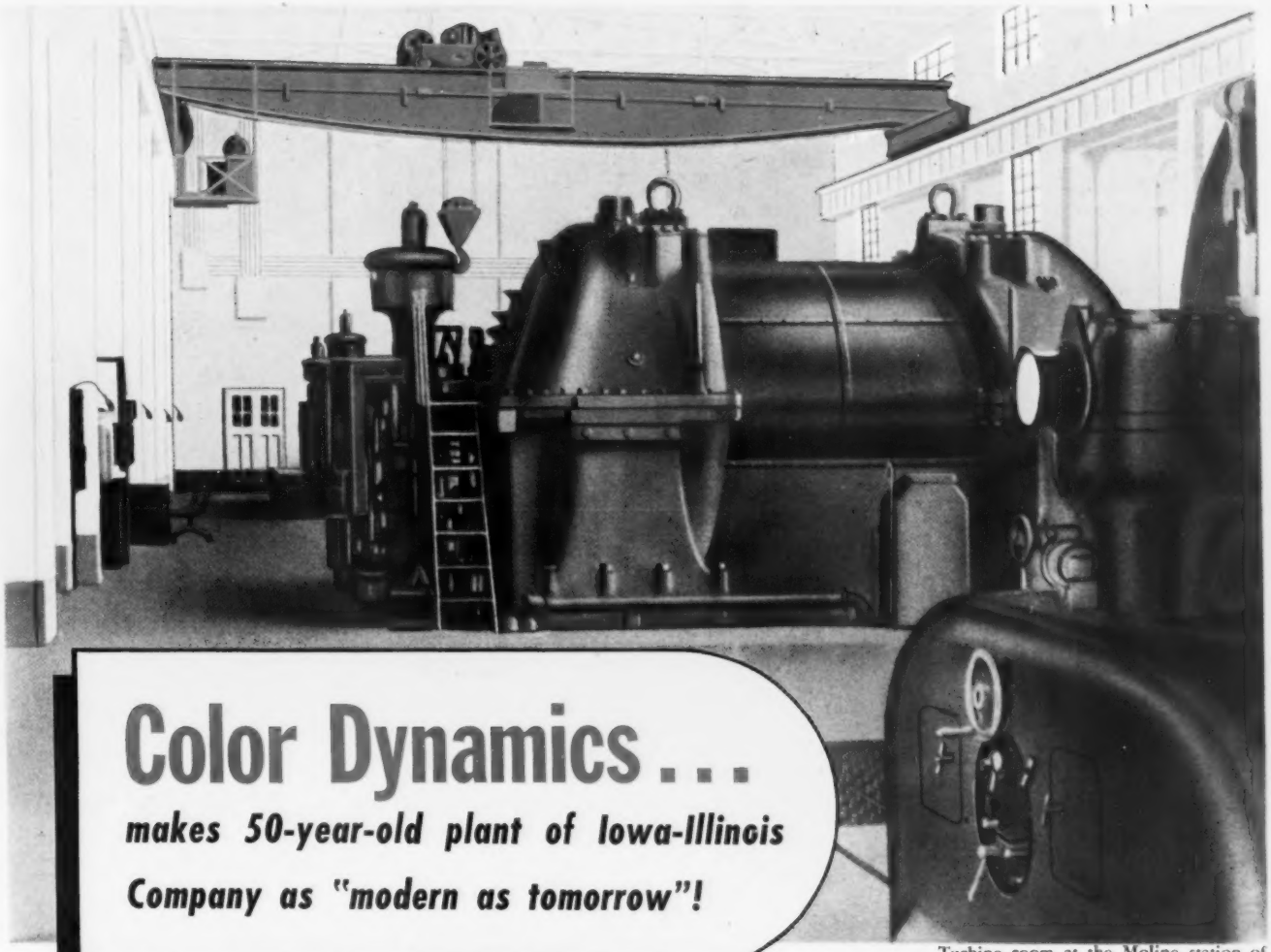
Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY



Color Dynamics . . .

makes 50-year-old plant of Iowa-Illinois Company as "modern as tomorrow"!

Turbine room at the Moline station of the Iowa-Illinois Gas & Electric Company

BY ACTUAL experience with Pittsburgh's COLOR DYNAMICS, production executives are finding that color properly "engineered" on walls, floors, ceilings and machines helps to maintain quality and quantity of production.

Another example of what COLOR DYNAMICS can do in a plant is the Moline station of the Iowa-Illinois Gas & Electric Company. Here are the comments of Will H. Weise, its operating engineer:

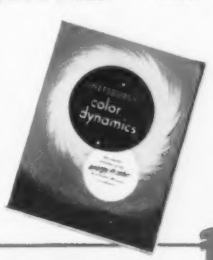
"Since repainting according to the principles of COLOR DYNAMICS, the turbine room of this 50-year-old station looks as up-to-date as though it had just been constructed. For better lighting we used Light Cream on ceiling, skylight areas, trusses and upper walls. Lower walls were painted in Sea Foam Green for its eye-rest qualities. Light Grey was used on the floors. Turbines, generators, pumps and auxiliary equipment were painted Vista Green.

"Turbine hand wheels, valve wheels, operating levers, switch boxes and other points to which the operators' attention must be quickly attracted were painted in bright Orange. Further to reduce accident hazards, we made the travelling crane more conspicuous by painting it in Orange.

"Our employees are unanimous in preferring the present colors. They work more efficiently, more cheerfully, with less fatigue and greater safety.

"Although the job was done more than a year ago, there is no evidence so far that these lighter colors will require repainting more often than the greys and blacks we had formerly used."

Why not try COLOR DYNAMICS in your plant—on a machine or two or in one department? A request on your company's letterhead will bring you a FREE copy of our new and enlarged booklet which explains the principles of COLOR DYNAMICS and suggests many practical applications. Pittsburgh Plate Glass Co., Paint Division, Dept. TW-6, Pittsburgh, Pa.



Paint RIGHT with Color Dynamics

Paint BEST with Pittsburgh Paints!

The benefits of COLOR DYNAMICS are made more enduring when you use Pittsburgh long-lasting, high-quality paints. There's a Pittsburgh Paint for every industrial need.

WALLHIDE—available in four types: **FLAT**—a velvet-like finish that is beautiful and restful; **SEMI-GLOSS**—with higher sheen; **GLOSS**—with enamel-like sheen; **PBX**—extra-durable finish can be washed frequently without streaking or spotting. These paints are enriched with Pittsburgh's exclusive *"Vitolized Oils"* which keep film *live*, tough, elastic.

LAVAX PBX ENAMEL—for woodwork, furniture or metal trim. Brushes out to a smooth, satin finish that resists marring and abrasion.

FLORNIDE—for floor surfaces, quick-drying, tough, can be scrubbed frequently with soap solutions.

LAVAX MACHINERY ENAMEL—a tough, durable finish which is impervious to oil, grease, grime or dirt.

PPG

PITTSBURGH PAINTS

PITTSBURGH PLATE GLASS COMPANY, PITTSBURGH, PA.

PITTSBURGH STANDS FOR QUALITY PAINT AND GLASS

UNBRAKO

REG. U. S. PAT. OFF.

Self-Lockers

Knurling of Socket Screws originated with "Unbrako" in 1934.

STAY PUT . . . REGARDLESS OF THE MOST CHATTERING VIBRATION

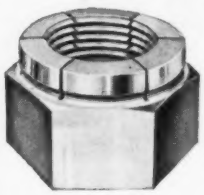
The Knurled Cup Point of the "Unbrako" Socket Set Screw (A) makes it a Self-Locker—the point digs-in and stays dug—even when subjected to the most chattering vibration. The Swaged Knurled Threads of the "Unbrako" Socket Set Screw (B) make it a Self-Locker, too—for use where the points such as: flat, dog, cone and oval do not lend themselves to knurling.

Millions of these Self-Lockers—in sizes from #4 to $1\frac{1}{2}$" are used throughout industry. Write for your copy of the "Unbrako" Catalog.

"Unbrako" and "Hallowell" Products are sold entirely through Industrial Distributors.

OVER 44 YEARS IN BUSINESS

"FLEXLOC" SELF-LOCKING NUTS

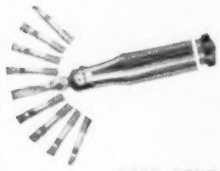


Regular and Thin "Flexloc" are Self-Locking, All-Metal, One-Piece Stop Nuts. Some of the largest mills have found them to cut maintenance radically. "Draper" and American Hex Standards. Free samples. Millions in use. PAT'D AND PATS. PEND.

"UNBRAKO" KNURLED SOCKET HEAD CAP SCREW

The knurled head of this "Unbrako" provides a slip- and fumble-proof grip, though the fingers and head be ever so oily, therefore, it can be screwed-in faster and farther before it becomes necessary to use a wrench.

"HALLOWELL" KEY KIT



PATS. PEND.

You can't screw socket screws in or out without a hex socket wrench, so why not get our No. 25 or No. 50 "Hallowell" Hollow Handle Key Kit which contains most all hex bits.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA., BOX 571 • BRANCHES: BOSTON • CHICAGO • DETROIT • INDIANAPOLIS • ST. LOUIS • SAN FRANCISCO

Gas file

The STANDARD Bleachery
And Printing Company, Inc.

Carlton Hill, New Jersey

Carlton Hill, January 9, 1947

Carbomatic Corporation
117 E. 63rd Street
New York 23, N. Y.

Attn: Mr. F. M. Crossman

Gentlemen:

The recent installation of three Carbomatic heat generators, as a separate drying unit, has proven highly satisfactory.

It has reduced drying time by approximately 50% on this particular operation as compared with former methods. In addition the initial installation costs were considerably less than the estimates for a steam drying unit to do the same job.

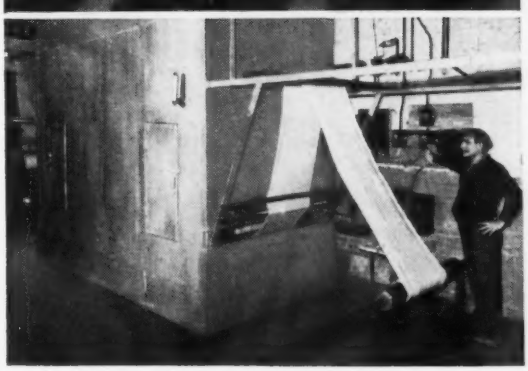
We are presently considering the installation of a Carbomatic singeing unit in anticipation that the results will prove as satisfactory as the drying unit has to date.

Very truly yours,

R. W. Pro

DRYING TIME REDUCED 50% BY INFRA-RED GAS DRYERS

Interior of dry-box showing arrangement of Gas-fired ceramic burner drying unit



Bleachery dry-box equipped with Gas-fired infra-red ceramic burners

There's nothing really new or unusual about The Standard Bleachery's experience with modern Gas-fired textile processing equipment. But their records of approximately 50% reduction in drying time serve to confirm the results in dozens of plants.

In fabric singeing, too, Gas-fired infra-red burners have achieved quite astonishing success. At cloth speeds of 300 to 500 yards per minute both sides of the fabric can be singed at one time, so that re-winding is eliminated; no flame penetrates the cloth to scorch or weaken the fibers.

GAS is the ideal fuel for textile processes requiring heat. The flexibility of Gas Equipment, and the controls which automatically maintain the exact temperatures for any type or weight of cloth, permit the application of GAS right in production line for drying, polymerizing, curing, slashing.

Whenever you need heat for textile processing it will pay to check with your local Gas Company Representative.

AMERICAN GAS ASSOCIATION
420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

MORE AND MORE...
THE TREND IS TO GAS
FOR ALL INDUSTRIAL HEATING

One Order to CRANE covers all the Piping Materials

. . . And that goes whether you're installing a boiler or a compressor, a process piping system or a washdown water line. You can get everything from Crane.

It's the *complete* Crane line that saves time in writing specifications . . . in ordering materials . . . and on the installation. It's the line that simplifies piping procedures from design to erection to maintenance. Because it permits standardization on the widest scale . . . and because standardizing on Crane equipment gives you this 3-way advantage:

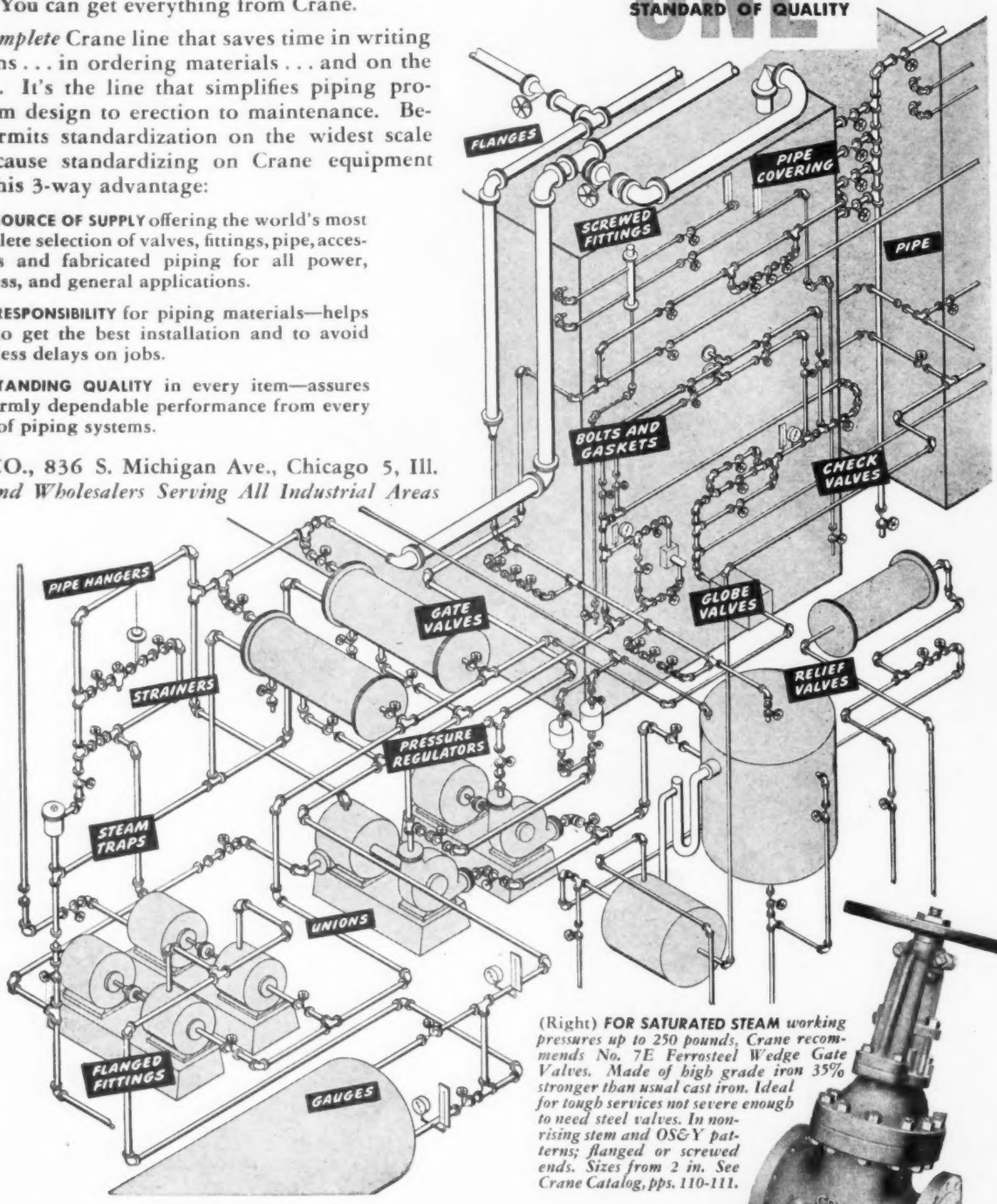
ONE SOURCE OF SUPPLY offering the world's most complete selection of valves, fittings, pipe, accessories and fabricated piping for all power, process, and general applications.

ONE RESPONSIBILITY for piping materials—helps you to get the best installation and to avoid needless delays on jobs.

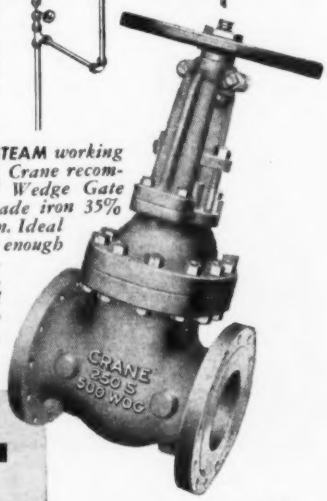
OUTSTANDING QUALITY in every item—assures uniformly dependable performance from every part of piping systems.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

ONE
SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



Fuel, water and condensate piping to oil-burning boilers.



(Right) **FOR SATURATED STEAM** *working pressures up to 250 pounds, Crane recommends No. 7E Ferrosteel Wedge Gate Valves. Made of high grade iron 35% stronger than usual cast iron. Ideal for tough services not severe enough to need steel valves. In non-rising stem and OS&Y patterns; flanged or screwed ends. Sizes from 2 in. See Crane Catalog, pps. 110-111.*

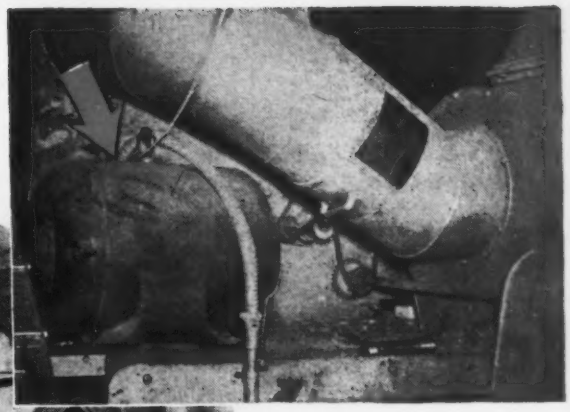
EVERYTHING FROM . . .

VALVES • FITTINGS
PIPE • PLUMBING
AND HEATING

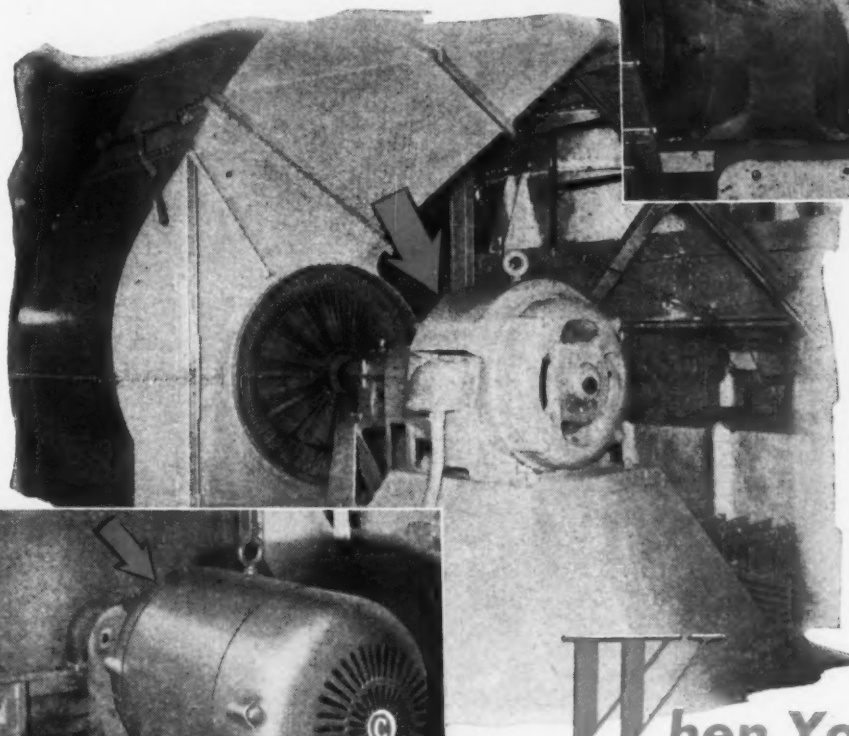
CRANE

FOR EVERY PIPING SYSTEM

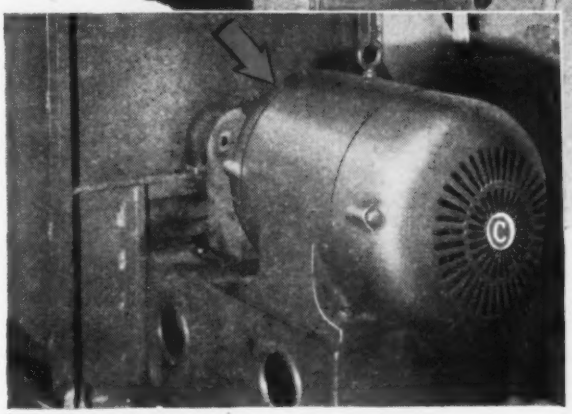
You Can Forget About Atmospheric Hazards



This 5 horsepower Century motor operates a conveyor in a grain elevator in an atmosphere charged with explosive dust.



Because this Century 200 horsepower motor operates a blower in the boiler house of a large generating plant it is *protected from falling objects* and dripping liquids.



In this installation the 15 horsepower Century motor is *totally enclosed fan cooled* because it operates in an atmosphere charged with corrosive fumes that would attack the vital parts of the motor.

When You Have a CENTURY Protected Motor ...Properly Applied

WITH the correct Century motor driving your machine you can have complete confidence that it will provide a long life of satisfactory performance.

From the wide range of standard types and sizes there is a Century motor that will meet the electrical characteristics and atmospheric conditions of nearly every application.

The three examples shown here each require a different kind of motor frame because of the differences in surrounding conditions. In addition to the fact that all three are powered by Century motors — they have other things in common. They are quiet starting, and they run smoothly and quietly due to their unusual freedom from vibration. They have the correct electrical characteristics to give top performance.

Century builds a complete line of electric motors and generators, fractional and integral horsepower, in the popular sizes to meet the requirements of appliances, industrial production and commercial needs.

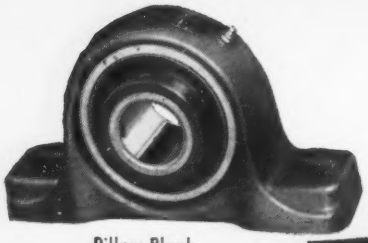
Specify Century for all your electric power applications.

Century C MOTORS

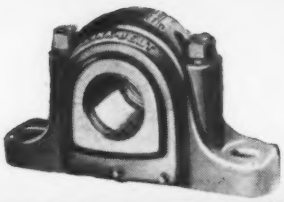
CENTURY ELECTRIC COMPANY • 1806 Pine Street • St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

520



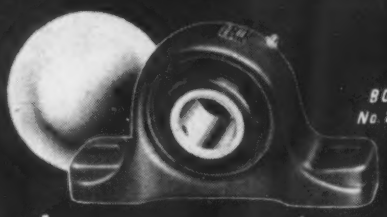
Pillow Block
Solid Housing
Medium Series 300



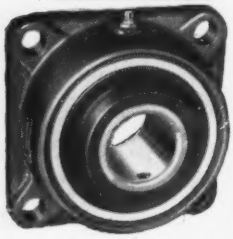
Pillow Block
Spilt Housing
Light Series 200

Pillow Block
Split Housing
Medium Series 300

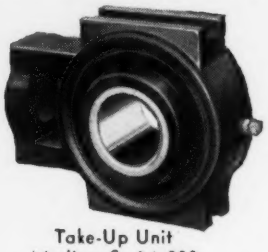
BALL BEARINGS



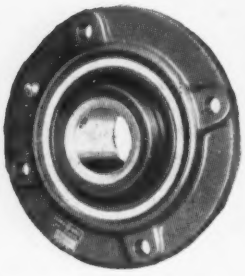
by LINK-BELT



Flange Unit
Medium Series 300

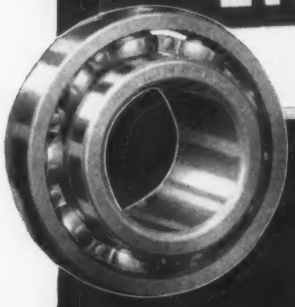


Take-Up Unit
Medium Series 300

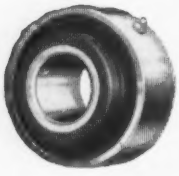


Flange Cartridge Unit
Medium Series 300

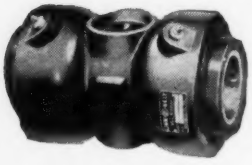
Pillow Block
Solid Housing
Light Series 200



May we send you a copy of Link-Belt Book No. 2094, describing the various Link-Belt Ball Bearing Units shown here. Book contains engineering data, capacities and dimensions. Also send for Book No. 2095 covering Link-Belt Roller Bearings. Link-Belt Ball & Roller Bearings are sold by all Link-Belt Offices and Distributors throughout the country.

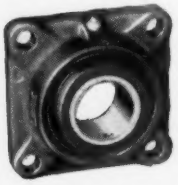


Cartridge Unit
Medium Series 300



Hanger Unit
Light Series 200

Take-Up Unit
Light Series 200

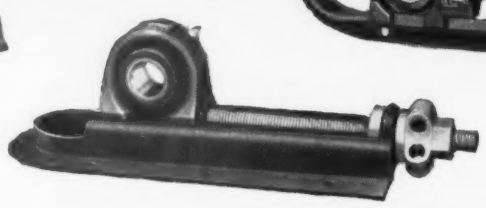


Flange Unit
Light Series 200

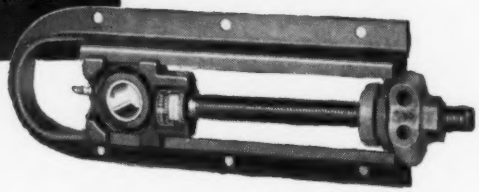
LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Houston 2, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8. Offices, Factory Branch Stores and Distributors in Principal Cities.

Self-Aligning Take-Up
(Protected Screw Type)
Series TDS-200

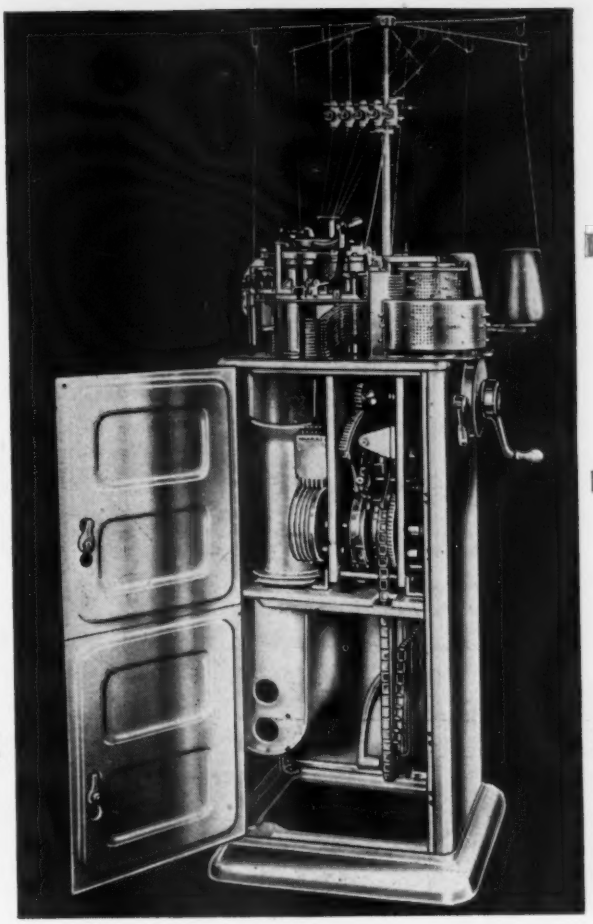


Self-Aligning Take-Up
Light Series TAS-200



Self-Aligning Take-Up
Light Series TBS-200

10,900



"Holdstitch," new seamless knitting machine utilizes Reynolds Aluminum by American Textile Machine Corporation, Murfreesboro, Tennessee.

ALUMINUM cuts weight and cost in new seamless knitting machine

IN MAKING THEIR NEWLY DESIGNED "Holdstitch," American Textile cuts cost and weight by using Reynolds Aluminum in these ways:

Structural frame and elsewhere—extruded aluminum shapes replace cast iron. Aluminum is lighter, yet strong and sturdy.

Top mounting plate and base . . . of heat-treated aluminum castings.

Doors of high-strength aluminum sheet—open and close smoothly.

Maintenance is easy and inexpensive. Aluminum is rustproof, free from corrosion, requires no painting or coating. Its smooth, gleaming finish adds much to the pleasing appearance of the machine.

If you are designing a new machine or considering the purchase of new equipment, call in Reynolds textile engineers. Without any obligation they will help you take advantage of the many possibilities of aluminum design to cut costs and eliminate dead weight.

Write to our nearest field service office, or to Aluminum Textile Sales Division, Reynolds Metals Co., 2535 South Third Street, Louisville 1, Kentucky.

Other applications where strong, light, rustproof Reynolds Aluminum does a better job for the textile industry . . . and for you!

- **Traverse Bars**
- **Heddle Frames**
- **Stocking and Sock Boards**
- **Trident or Cheese Boards**
- **Cake Trays and Yard Trays**
- **Spinning Pots and Buckets**
- **Roofing and Skylight Frames**
- **Spindle Sleeves and Adapters**
- **Bobbins, Spools, Spinning Cylinders**
- **Loom Parts, Quills, Cans, Bins, Drums**
- **Bobbin Racks, Pin Boards, Cone Boards**

REYNOLDS METALS

REYNOLDS

The Great New Source of ALUMINUM

INGOT · SHEET · SHAPES · WIRE · ROD · BAR · TUBING · PARTS · FORGINGS · CASTINGS · FOIL · POWDER

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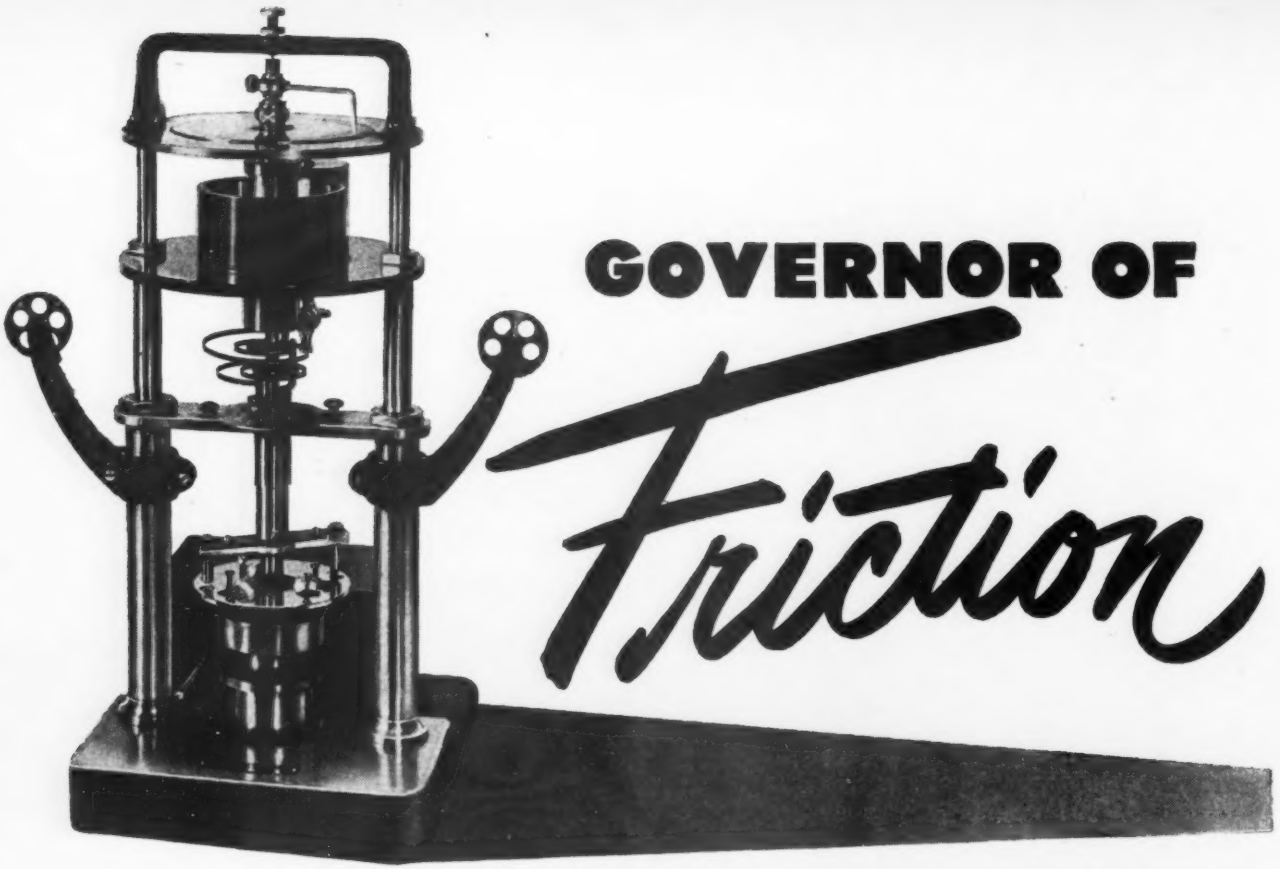

GOVERNOR OF *Friction*

(*Herschel Coefficient of Friction*)

As power is the life blood of industry, friction is the deadly poison that can slow wheels, reduce efficiency to the point of disaster.

Correct lubrication, obviously, is the preventive which protects power against the depredations of friction. And . . . the coefficient of friction of a lubricating oil is an important factor in the utilization of input power in all machines.

Sinclair Research is ever alert to aid you in developing maximum output from your equipment with such apparatus as the Herschel Coefficient of Friction machine, shown above. This machine is invaluable where lubrication of all parts of machinery is concerned.

With such apparatus and the continuous effort of skilled experts in refinery control, Sinclair assures you of outstanding performance from lubricants developed specially for your specific application.

Sinclair Textile Lubricants
FOR MINIMUM FRICTION—
MINIMUM POWER CONSUMPTION

LILY WHITE OILS
For Spindles

NO-DRIP LUBRICANTS
For Coulier Motion
Rocker Arms, Gear and Camshaft Bearings,
and Half-speed Shock Absorbers

RUBILENE
For Air Compressor and Vacuum Pumps

BEARING GREASE AF
For Anti-Friction Bearings

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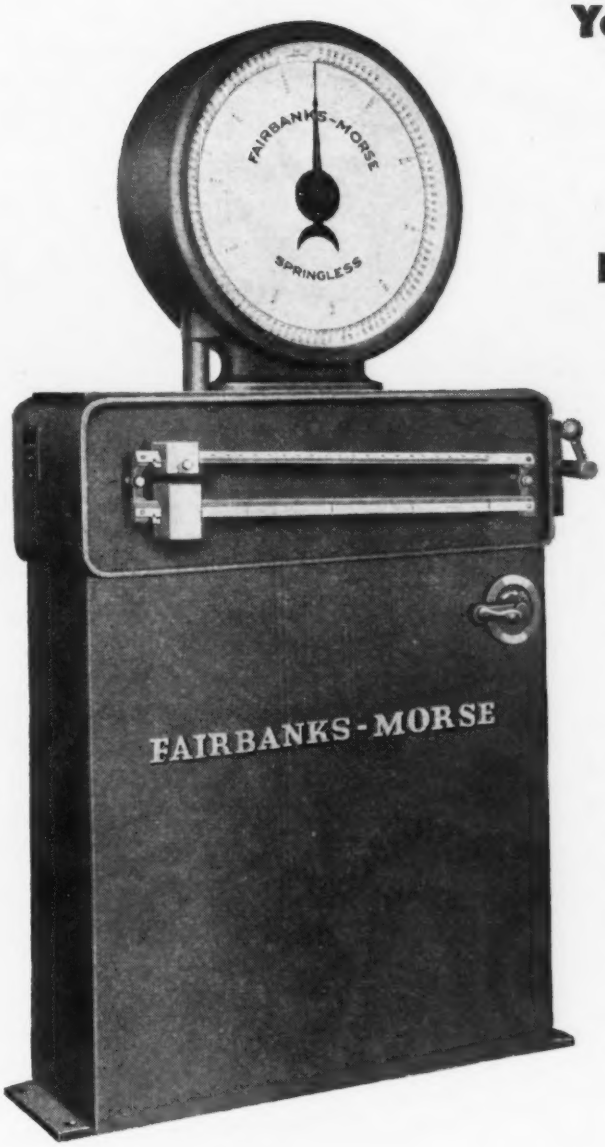
SINCLAIR

Lubricants for Industry

FINEST CRUDES + EXPERT RESEARCH and MANUFACTURING CONTROL = OUTSTANDING PERFORMANCE

Accurate Today and for Years to Come



FAIRBANKS-MORSE SCALES

It is not remarkable that Fairbanks-Morse Scales give enduringly accurate weighing service when you realize:

. . . that only materials of highest quality go into their manufacture —from their sturdy frames to their most minute working parts.

. . . that only skilled workmen are used to assemble them.

. . . that constant research is going on to make these scales even finer.

. . . that they have a heritage of 117 years of precision scale engineering.

Fairbanks-Morse Scales will serve you with accuracy—today and for years to come. Fairbanks, Morse & Co., Chicago 5, Illinois.

Fairbanks-Morse

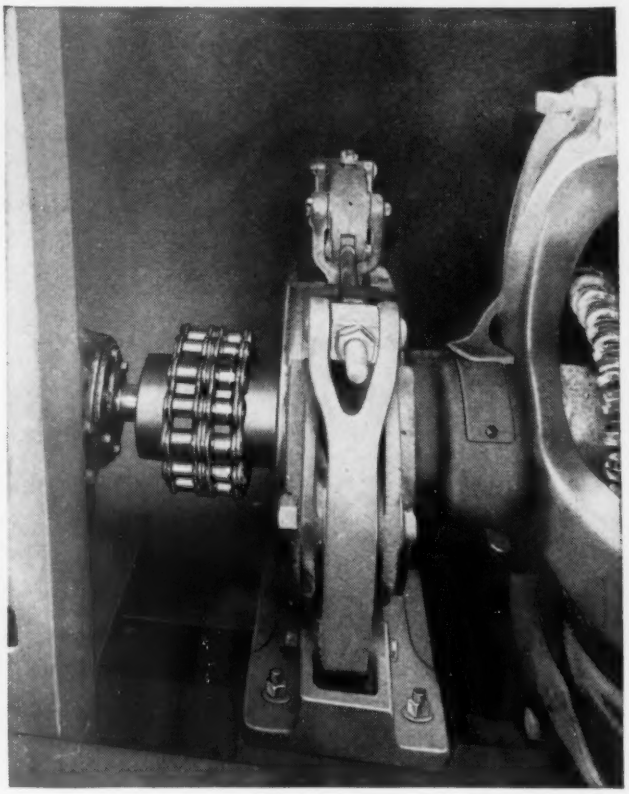
A name worth remembering

Diesel Locomotives
Diesel Engines
Generators • Motors
Pumps • Scales
Magnetos • Stokers
Railroad Motor Cars
and Standpipes
Farm Equipment

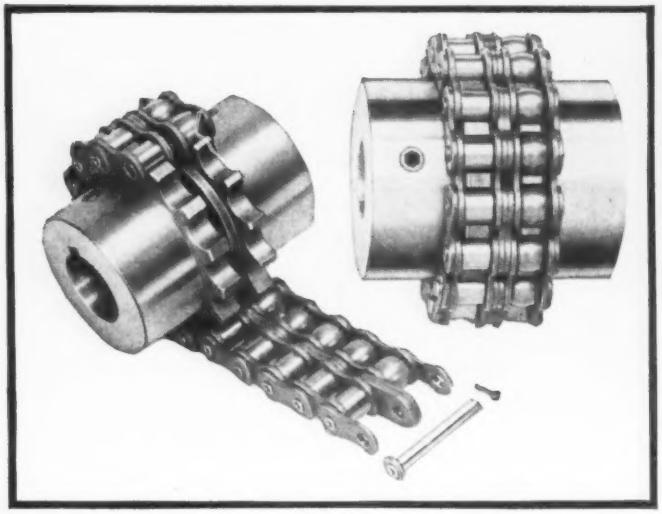
do you know Roller Chain...

makes the best Flexible Coupling?

① **IF YOU'RE LOOKING FOR** a flexible coupling that's efficient . . . extremely flexible . . . shock absorbing without backlash . . . that's easy to install, you'll find the new Baldwin-Rex Tru-Flex the coupling you want.

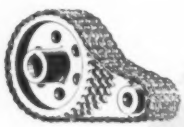


② **TRU-FLEX COUPLINGS** are distinguished by their oversize convex rollers on one chain strand. These rollers maintain only line contact with sprocket teeth, providing extreme and permanent flexibility. This design permits the coupling to accommodate shaft misalignments—without wear on sprocket and chain—and to absorb greater torsional shock loads. Snug fit of the chain assures far longer life than the "sloppy" fit on ordinary chain coupling.



③ **INSTALLATION** of Baldwin-Rex Tru-Flex Couplings is simple. It is merely necessary to wrap the chain over the sprockets, insert the connector and secure the cotter. Coupling removal is just as easy. Withdraw the connecting pin and remove the chain. The coupled halves are then separated.

Tru-Flex Couplings employ no short-lived material in their design. Their all-steel construction assures maximum service life.



The Baldwin-Rex Man can assist you in the proper selection and application of Tru-Flex Couplings for your machines. Call him or write direct to:

BALDWIN·REX

ROLLER CHAINS

BALDWIN-DUCKWORTH DIVISION OF CHAIN BELT COMPANY

346 Plainfield Street, Springfield 2, Mass.

Why do Prize-Fighters buy Annuities?

A Prize-Fighter buys an Annuity. He sets up a Reserve for Depreciation.

It is a guarantee to himself that, when he can no longer trade punches for a living, he will have an income that will keep him in comfort.

A Manufacturer sets up a Reserve for Depreciation.

It is a guarantee to himself that, when a machine is no longer able to operate at a profit, he will have the cash money ready to buy a new machine that will keep him in a good competitive position in his market.

•

Sometimes the Prize-Fighter in a wave of enthusiasm, cashes his Annuity to buy an interest in a Night Club.

Sometimes a Manufacturer—forgetting the meaning of the words "Reserve for Depreciation"—instead of keeping that Cash Money in negotiable securities where it belongs, lends it to the Business for Working Capital . . .

And when the time comes for him to invest that Reserve for Depreciation in New Machinery, to keep his plant in a good competitive position, the money is not available—

It's frozen!

•

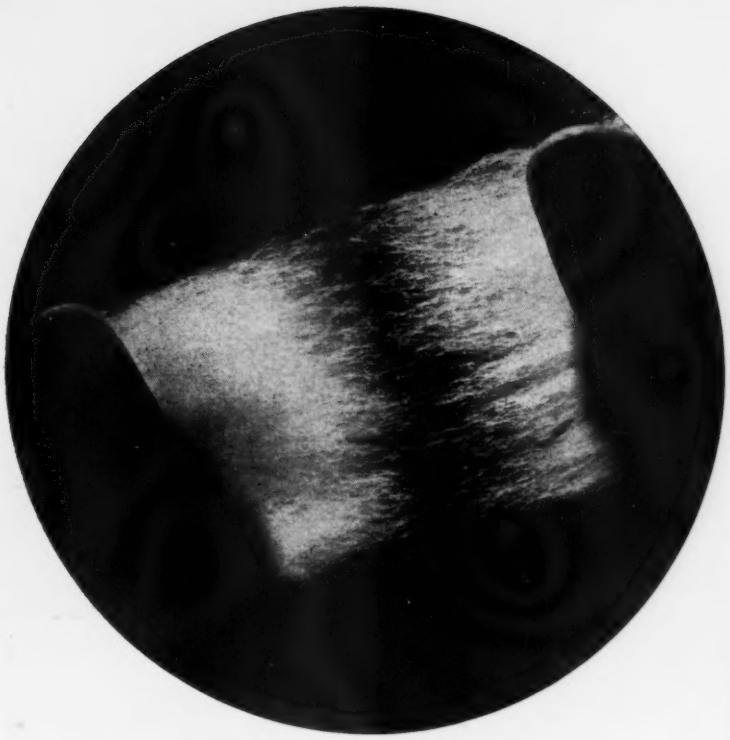
An advertisement on "Good Housekeeping in Business," published by the makers of Reading Full-Fashioned Knitting Machines.

TEXTILE MACHINE WORKS
READING, PENNA.

Graduation Glamour . . . Sheer, clear full-fashioned stockings take top honors for loveliness on any big day. Knitting these delicate fabrics requires the finest needles. As the result of a special TMW patented process which holds the needles straight and true, TMW "Fixture Drawn"* Needles assure you of the high quality fabrics you desire. Let us put your needle bars in shape for faster, more accurate, more profitable knitting.

* Reg. U. S. Pat. Off.

TEXTILE MACHINE WORKS • READING, PA.



TECA

improves results all down the line

hand

draping qualities

wrinkle resistance

stability

ironed-in crease retention

soil and stain resistance

mildew resistance

Laboratory check-ups and wear-test performance have convinced many a manufacturer, that by stepping up the TECA content, he increases those qualities in a fabric which sell it once—sell it again.

TECA, Eastman *crimped* acetate staple mixes well with other fibers—performs smoothly on any spinning system. It suggests unlimited possibilities—for men's and women's wear fabrics.

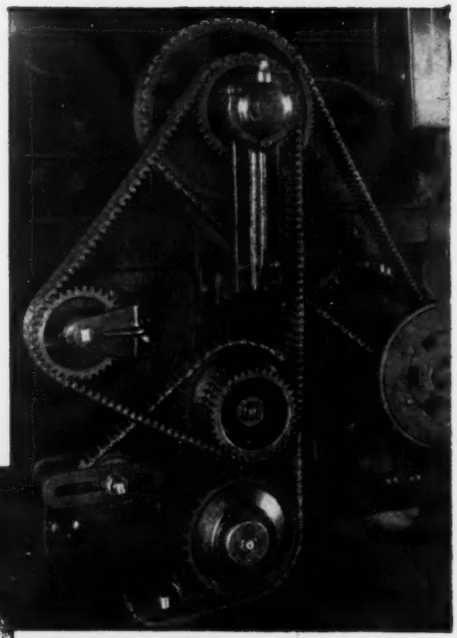
For further information about TECA, consult A. M. Tenney Associates, Inc., 10 East 40th St., New York, sales representatives for TENNESSEE EASTMAN CORPORATION (Subsidiary of Eastman Kodak Company), KINGSPORT, TENNESSEE.

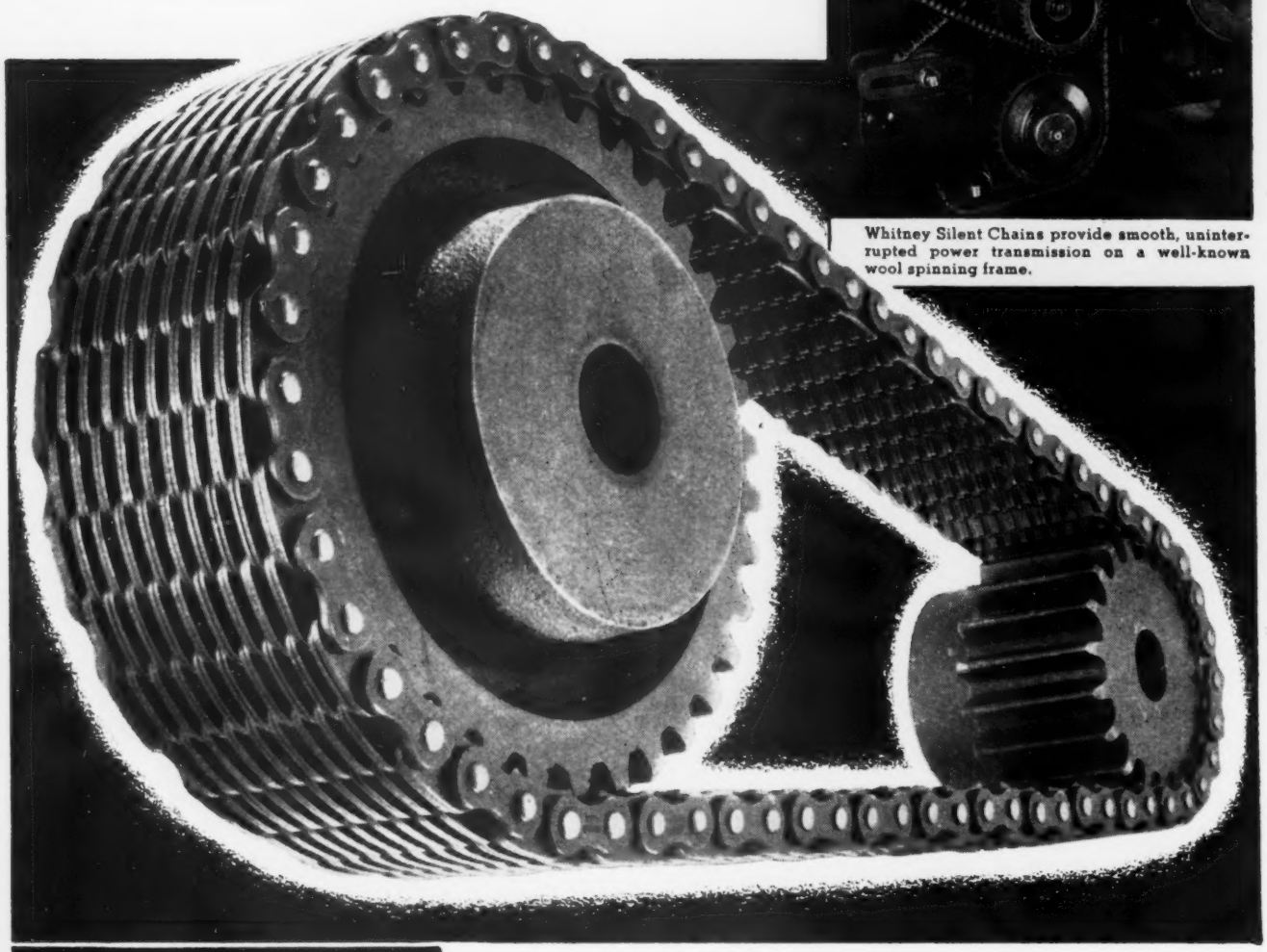
EASTMAN

crimped acetate rayon

Preferred Choice

OF LEADING TEXTILE MACHINERY MANUFACTURER





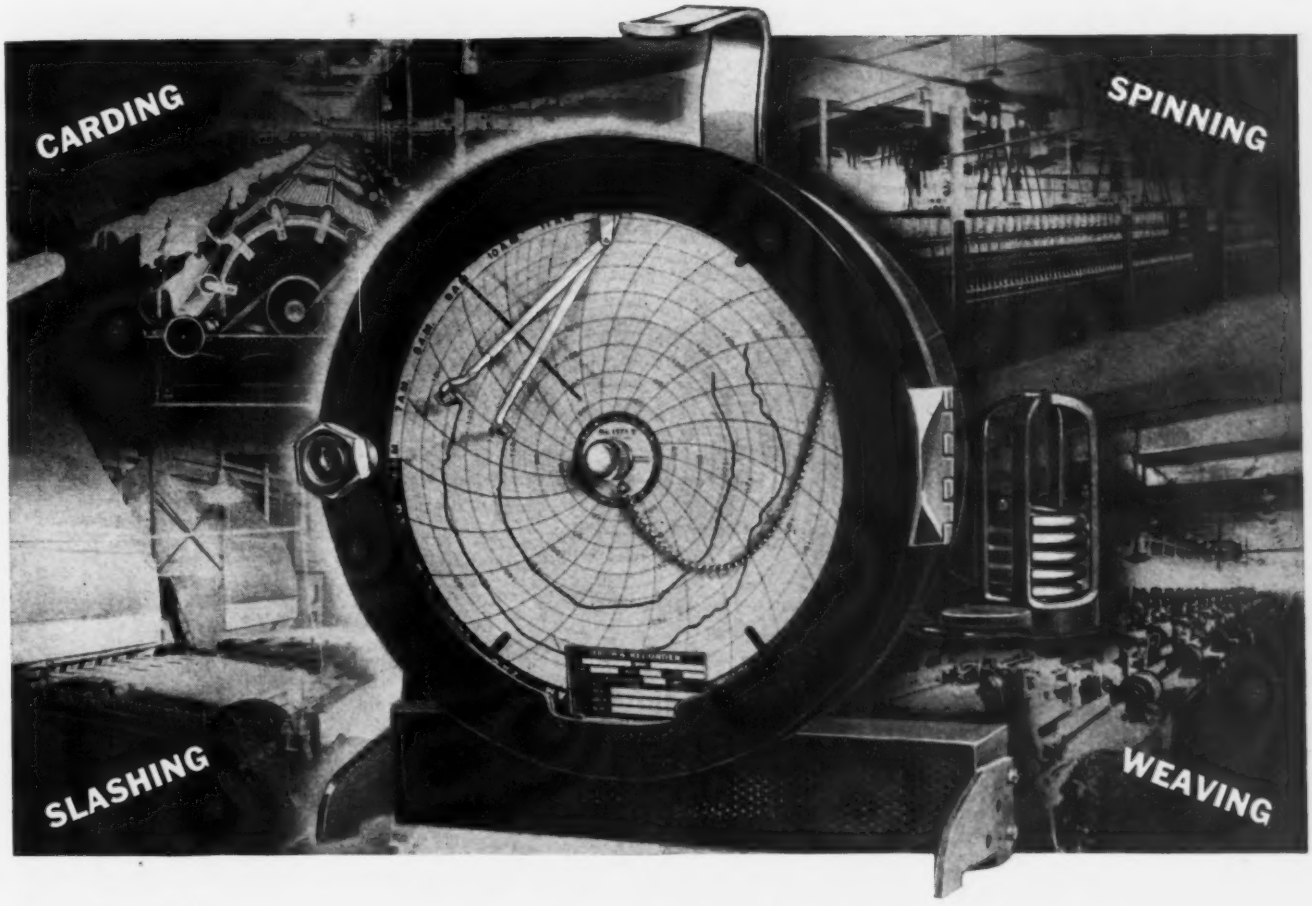
Whitney Silent Chains provide smooth, uninterrupted power transmission on a well-known wool spinning frame.

Whitney Silent Chains...

Throughout the textile industry, you'll find Whitney Silent Chains providing efficient transmission of power in all types of equipment . . . hosiery machines, wool spinning frames, cotton print presses, high speed cotton slashers, worsted cards — to name just a few. The reason — Whitney Silent Chains are the preferred choice by practically all textile machinery manufacturers. Whitney is "standard" because these chains have earned a reputation for delivering efficient power without *slipping* or *friction loss* from power source to driven mechanisms. They help maintain uniformity of products by transmitting constant motor speed. The exclusive Double Bearing principle whereby shocks and overloads are distributed on both the inside and outside of the chain bushing gives 50% greater load bearing area . . . provides long life, cuts maintenance. It will pay you to *standardize* on Whitney Silent Chain Drives. Write for complete information.

THE WHITNEY CHAIN & MFG. CO., HARTFORD 2, CONN.

Every Textile Mill—



NEEDS THIS HANDY PORTABLE INSTRUMENT

In textile mills, the importance of frequent room temperature and relative humidity checks is well-known. The Brown Thermometer-Hygrometer provides a convenient means for checking these factors throughout the mill.

This extremely light weight instrument can be set anywhere and will produce an accurate record of room temperature and relative humidity on either a twenty-four hour or seven-day revolution chart.

The well-guarded, mercury-filled temperature sensitive element is located on the side of the case and the large perforated steel section built into the base holds an extra long hygroscopic element. Notice, both of these oversized elements are located outside the case where they are in full contact with room atmosphere.

The convenient handle and strong base make this sturdy instrument readily portable. The combination door lock and handle prevents unauthorized access to the records. A green ink line records room temperature; while a purple line directly records percent of relative humidity on an 8" diameter chart. (Range 0-100°F. and 0-100% relative humidity.) No humidity tables are required.

Write for Catalog 6708. THE BROWN INSTRUMENT COMPANY, a division of Minneapolis-Honeywell Regulator Co., 4509 Wayne Avenue, Philadelphia 44, Pa. Offices in all principal cities.

TORONTO, CANADA — LONDON, ENGLAND
AMSTERDAM, HOLLAND — BRUSSELS, BELGIUM — STOCKHOLM, SWEDEN

SPECIFY WHEN ORDERING

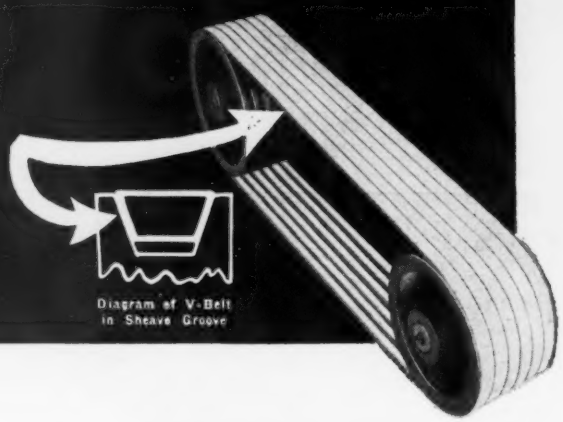
(1) Model Number (See table below).
(2) Chart #1565 for 24-hour revolution; or #1571 for 7-day rev.
(3 Electric (state voltage and frequency) or spring wound clock chart drive.

MODEL NUMBER	DESCRIPTION	PRICE
6882-601	Portable Thermometer-Hygrometer (as illustrated)	$133.00
6881-X01	Hygrometer Only	$100.00
6081-X01	Thermometer Only	$100.00

NOTE: For 7-day spring wound clock only—add $6.00

BROWN THERMOMETER-HYGROMETER

ONLY the SIDE of a V-BELT *Grips the Pulley!*



—That's why the SIDE is what really *Gets the WEAR!*

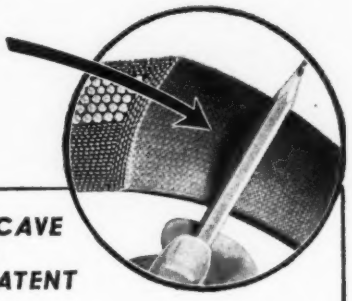
Look at a V-Belt in its sheave and you see at once that the *sides* of the belt do all the gripping on the pulley and get all the wear against the sheave-groove wall.

Notice, too—it's the *sides* that pick up all the power delivered by the driver pulley. The sides *transmit* that power to the *belt as a whole.*

And then, once more, its the sides—and the sides *alone*—that grip the driven pulley and *deliver* the power to it.

That is why you have always noticed that the sidewall of the ordinary V-Belt is the part that wears out first.

—*and here is how the* CONCAVE SIDE ★REDUCES Sidewall WEAR Giving You Much Longer Belt Life!



Clearly, since the sidewall is the part that wears out first, anything that prolongs the life of the sidewall will lengthen the life of the belt. The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the *middle* of the sides. They show also why the Patented Concave Side greatly reduces sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

★*More Important NOW That STRONGER Tension Members are Used!*

Now that Gates *Specialized* Research has resulted in V-Belts having much stronger tension members—tension members of Rayon Cords and Flexible Steel Cables, among others—the sidewall of the belt is often called upon to transmit to the pulley much heavier loads. Naturally, with heavier loading on the sidewall the life-prolonging Concave Side is more important today that ever before!

The CONCAVE SIDE is a GATES PATENT

Straight Sided V-Belt

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Gates V-Belt with Patented Concave Sidewall

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt Is Bending Over Pulley.

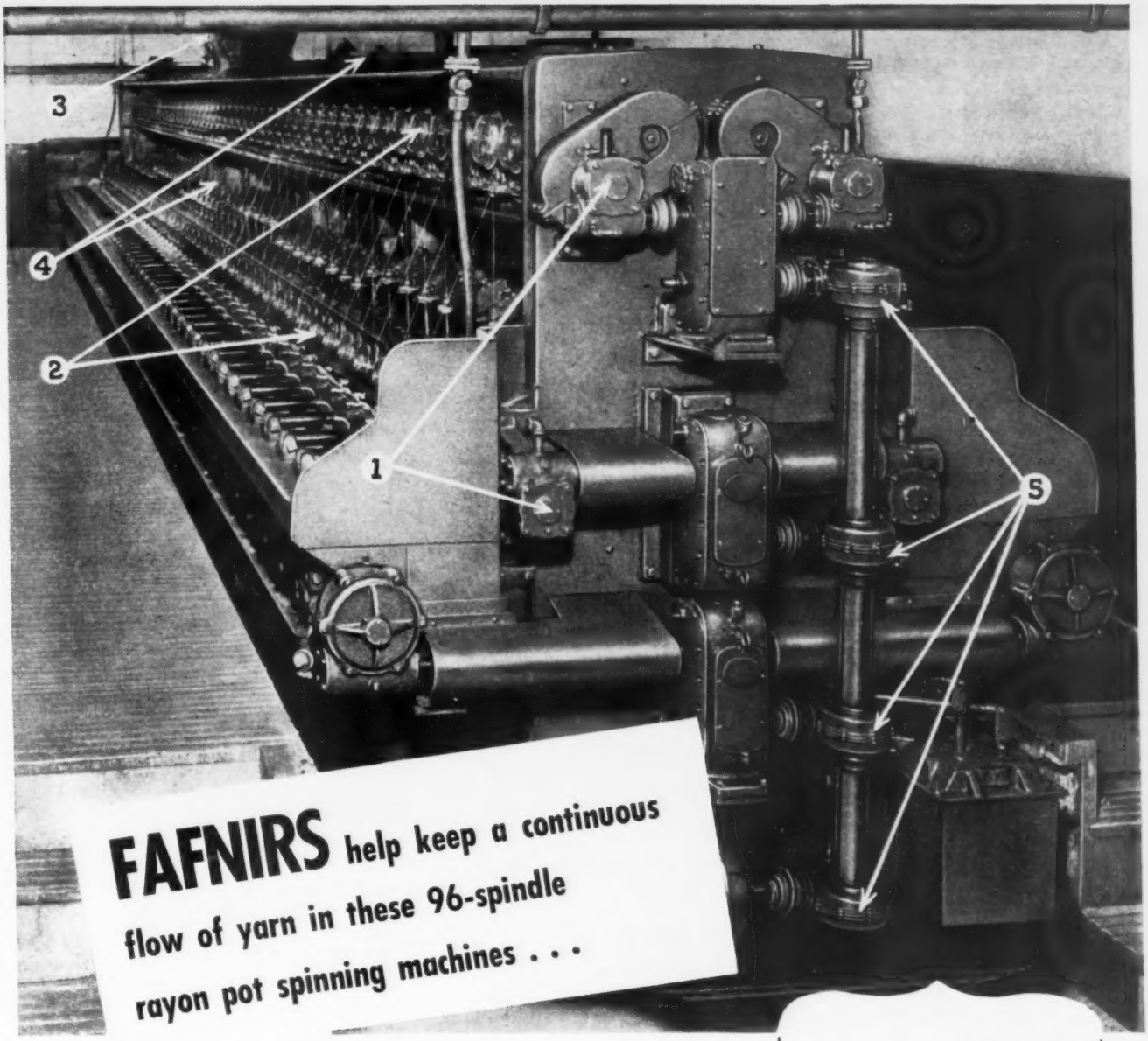
No Bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt.

476

THE GATES RUBBER COMPANY, DENVER, U. S. A.
"World's Largest Maker of V-Belts"

GATES VULCO ROPE DRIVES
Engineering Offices and Jobber Stocks **IN ALL INDUSTRIAL CENTERS** of the U. S. and 71 Foreign Countries

Gates
THE MARK OF SPECIALIZED RESEARCH



FAFNIRS help keep a continuous flow of yarn in these 96-spindle rayon pot spinning machines . . .

THE SUCCESSFUL OPERATION of a complex machine like this Butterworth Rayon Pot Spinning Machine depends to a major degree upon the performance of a lot of ball bearings. Thread dimension has to be uniform down the whole line of 96 spindles. Vibration, friction, or lack of concentricity in a shaft or gear, would play havoc with the uniformity of these fragile filaments. The requirements in bearings are further complicated by the corrosive atmosphere of sulphuric acid and water vapors.

The specially designed traverse mechanism gets much of its smooth, vibrationless operation from the use of Fafnir Ball Bearings . . . on shafts, flywheel and gears. Worms and gears of the spinning pumps and godet shafts are supported on Fafnirs . . . and the upper and lower godet drive shafts. These Fafnirs are the famous wide inner ring ball bearings with the double Mechani-Seals . . . the seals that trap lubricant inside a labyrinth of interlocking steel plates and lock out dirt and moisture. The spindle for each godet wheel runs on a pair of Fafnir Plya-Seal Bearings, with the new plastic-impregnated fiber washer, a recent Fafnir development.

Performance such as these Butterworth Machines deliver doesn't just happen. It is the fruit of long cooperation between Fafnir bearing engineers and textile machinery designers.
The Fafnir Bearing Company, New Britain, Conn.

1 & 4 Fafnir Wide Inner Ring Ball Bearing with self-locking collar used on godet drive shafts and traverse drive shafts.

2 Fafnir Plya-Seal Ball Bearings used on spindle for each godet wheel.

3 & 5 Fafnir Radial Ball Bearings used on fly-wheel, gears of traverse drive unit, also on worms and gears of drive shafts for the spinning pumps and godet shafts.

FAFNIR BALL BEARINGS

MOST COMPLETE LINE IN AMERICA

The Detergent that detours trouble

ORATOL L-48

● No guessing when you use Oratol L-48! This sulphonated amide is a powerful detergent with great foaming, emulsifying and wetting properties—gives equally successful results with cotton, wool, silk, rayon, acetates and aralac fibres!

Oratol L-48 is stable in hard water, under acid or alkaline conditions. Its use prevents the formation of insoluble soaps on the surface of dye liquors, and it acts as a dispersing agent for lime soap deposits. As a detergent and scour, in bleaching, dyeing and finishing, Oratol L-48 is outstanding! Priced low, this highly efficient product is well worth your attention. Samples and information on request.

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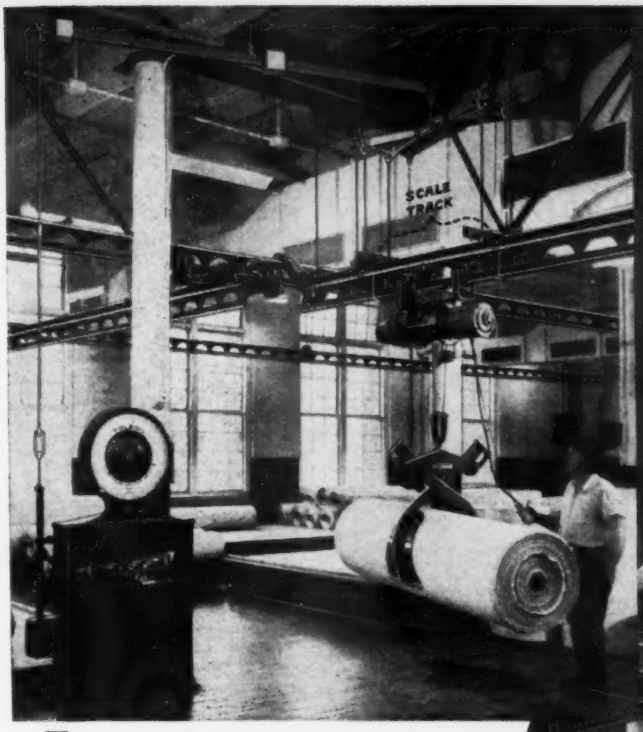
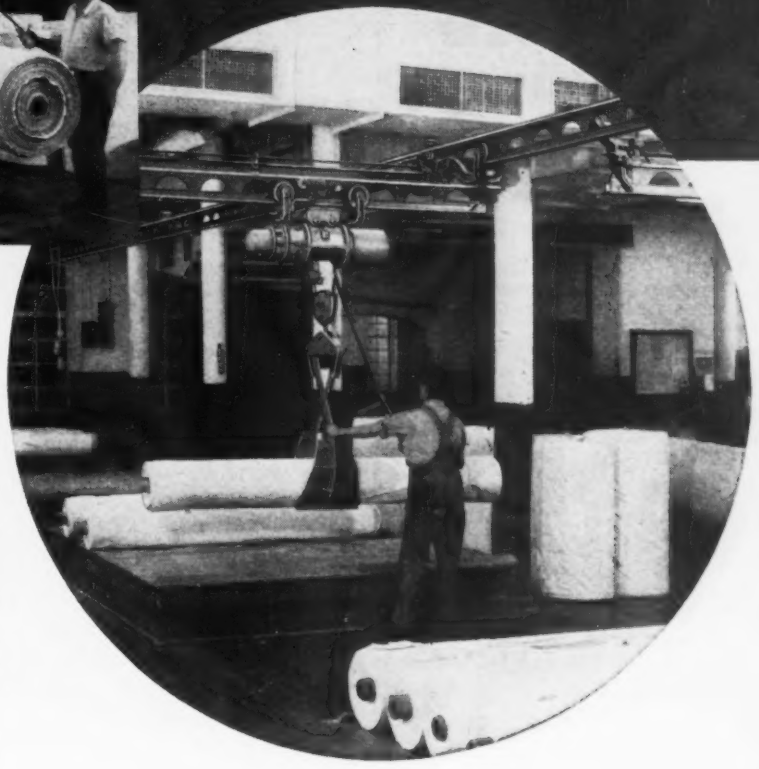


Faster, Easier Handling in CLOTH ROOMS



LONG, heavy, unwieldy rolls of cloth are easily handled to and from storage and inspection machines via the overhead Cleveland Tramrail route.

The smooth rolling carriers and transfer bridges are easily pushed by hand. The heavy lifting is done with electric hoists. The bridges interlock together, permitting a carrier to deliver its load directly to any point served by one bridge to any point served by another.

Along the route a scale track section can be provided for quickly weighing the rolls while supported by the carriers. The scale track section is connected by a lever arrangement to a scale which accurately indicates the weight.

Hand-propelled and motor-driven equipment, as well as automatic dispatch Cleveland Tramrail systems are now serving cloth rooms of many mills. We invite your inquiry for textile materials handling problems of any kind.

The use of Cleveland Tramrail has grown rapidly and become widespread in the Textile Industry. In textile mills of all kinds and sizes it is lifting and conveying cotton, wool, rayon, nylon and silk in every stage of preparation wherever the weight is more than one man can handle.

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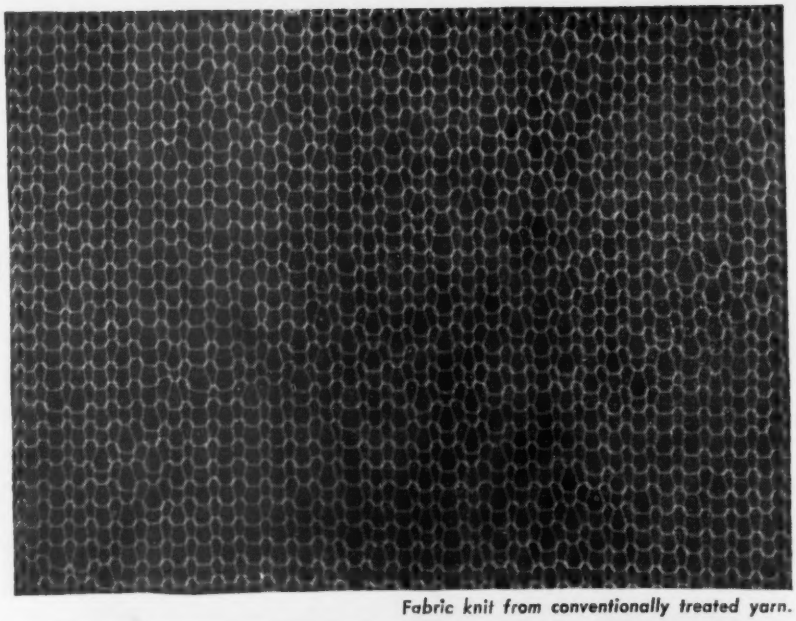
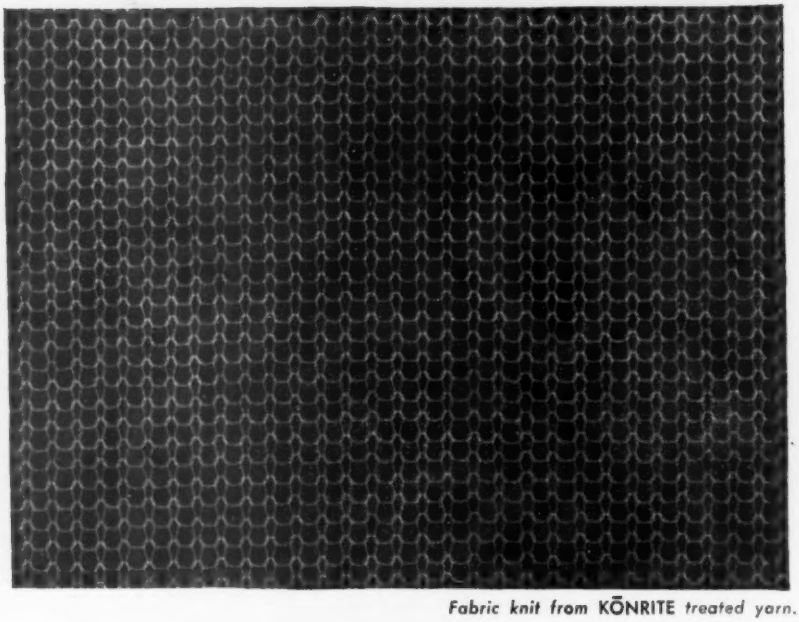
CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT

Is your stitch like this



Fabric knit from conventionally treated yarn.

or like this



Fabric knit from KŌNRITE *treated yarn.*

For the treatment of yarns for truly fine hosiery, Nopco presents KŌNRITE, a new and unique nylon coning oil. In Coning, Knitting, Seaming, KŌNRITE offers you:

OUTSTANDING RESULTS...

- ... ***in Coning*** — produces cones of proper density, practically eliminating overlaps, crossovers and underwinds
- ... increases cone production
- ... ***in Knitting*** — minimizes stripping of size — reduces pressoffs
- ... gives clear perfect stitch formation
- ... ***in Seaming*** — reduces roll... its strong defense against curling is a major factor in greatly increased hosiery production

OUTSTANDING ADVANTAGES...

- ... Controlled viscosity, assuring even distribution of oil on yarn
- ... New stitches firmly cemented through rapid drying action
- ... Prevention of softening in lagged yarn and fabric

For full information on KŌNRITE, *please write today.*

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EVOLVED THROUGH RESEARCH NOPCO

Kōnrite The Outstanding Nylon Coning Oil

YOUR CHANCES OF GETTING AHEAD

FOR 20 years we have been whittling away the foundations of our economic structure. We have been cutting away the incentives to "get ahead in the world," to increase production and to improve efficiency. Unless this process is reversed soon, we risk the sort of industrial stagnation that currently afflicts Great Britain so disastrously.

How far the whittling has gone is shown by the statement in the center of the page. It shows that everyone's stake in working harder and getting ahead has been reduced sharply since 1929. In that year, anyone who was even moderately successful could look forward to reaping the rewards of his success. If he earned $5,300 annually over a period of 25 years he could retire on a comfortable income of $3,000 per year. Or he could pile up enough capital to go into business for himself. He could fulfill the American dream as phrased by Abraham Lincoln in his first annual message to Congress in 1861:

"The prudent, penniless beginner in the world, labors for wages awhile, saves a surplus with which to buy tools or land for himself, then labors on his own account another while, and at length hires another new beginner to help him. This is the just and generous and prosperous system, which opens the way to all, gives hope to all, and consequent energy and progress, and improvement of condition to all."

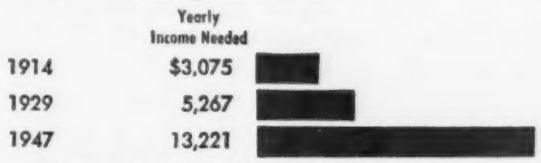
Look at the situation today. To retire on an annual income from investment that will buy as much as $3,000 did in 1929, a young man needs to earn over $13,000 a year for 25 years. That's more than 2½ times the income he would have needed in 1929. The same thing is true of acquiring a stake in a business.

YOUR CHANCES OF GETTING AHEAD

To see how your chances of getting on in the world have changed during the past few decades, the McGraw-Hill Department of Economics has calculated how much it now takes to save enough to acquire a retirement income or a comparable stake in a business, as compared to what it took in 1914 and 1929.

The objective set is an income from investment equal to $3,000 a year in 1929 dollars. It is assumed that the savings required to yield this income are made over a period of twenty-five years. During that period it is also assumed that $4,000 per year (in 1929 dollars) is spent on living expenses.*

Here is how the figures work out:



It now takes more than four times as large an annual income as it did in 1914 to gain a comparable stake. It takes well over twice as much as it did in 1929.

Changes in three factors — federal income taxes, living costs, and interest rates — explain why the income needed has multiplied so. Here's how these factors line up for the three years.

	Federal Income Taxes Married Man, 2 dependents		Cost of Living (Index Numbers 1935-39)	Interest Rate High-grade Corporate Bonds
	$5,000 income	$10,000 income		
1914	$10	$60	71.8	5%
1929	$3	$40	122.5	5%
1947	$589	$1,862	155.0	2½%

Similar calculations show that if we could reduce federal expenditures from $35 billion to $25 billion annually, raise interest rates by one-tenth and lower living costs by 15% — all realistic possibilities if we make the effort — then the income needed to build up such a retirement fund would come down to $9,500. The chances of realizing that goal would then be restored to what they were in 1929.

*Several other factors were omitted from the calculations because they would not have a decisive effect on the results. Thus, existence of social security pensions and retirement funds now reduces the income needed; but if state income taxes were added, the income needed would increase.

Why Try to Succeed?

While the income needed for retirement today has increased 2½ times — or by more than 150% — since 1929, the average person's income has increased only 80%. So the average man's chances of achieving success are really slimmer now than a generation ago.

This 1929-47 trend is something new in America. The average person's chances of getting ahead improved during 1914-29. In that period the dollar income needed for retirement or a stake in business rose by 75%, but the average income rose by 100%. So more people were within striking distance of success and security in 1929 than in 1914. The story has been different since 1929.

Fewer people actually do achieve financial success today. Only 1% of all families now have incomes large enough to build up a retirement fund or a stake in business. In 1929 almost 6% of all families attained a comparable degree of success.

Higher taxes are the most important reason why it takes so much more now to build up a competence. They account for one-half the increase in the amount needed. The other half is explained by higher living costs and lower interest rates.

It is, of course, true that few people ever get into the higher income brackets. So the process of cutting

away the incentives which play such a key role in our economic system affects comparatively few people immediately. It does, however, have a powerful indirect effect on all of us.

Everybody Loses

When half to four-fifths of any additional income of successful people goes to Uncle Sam a heavy drag is obviously put on doing the work to get it. Thus, we stand to lose the benefit of full use of the nation's best brains. By so doing we stifle industrial progress. And the loss in productive efficiency far outweighs the tax revenue the Treasury gains. Carried far enough, the process of stifling economic progress by slashing rewards leads straight to industrial stagnation.

The same process also multiplies the risks of embarking on new capital investment. High taxes rule out all but the most profitable new projects and restrict most expansions to boom times when profits are high. So capital investment follows a boom and bust pattern and, by so doing, contributes much to ups and downs in production and employment.

The Sorry Plight of Britain

The case of Britain today provides an object lesson of how blighted incentives produce industrial stagnation. *Britain's number one economic problem is to get more production. But the tax load there is so heavy it stifles the incentive to produce more.*

A coal miner who works an extra shift pays about a third of his added earnings to the tax collector. And, as the London *Economist* comments, tax rates on business executives are so high that they kill every incentive except that to tax evasion. In short, not only is the incentive to succeed blighted, but so is the incentive to work.

A root-cause of Britain's trouble is this: The cost of an expensive program of social benefits has been piled on top of the heavy costs of paying for past wars and trying to prevent future wars. Tax rates are boosted accordingly. What her experience proves is that the attempt to provide excessive social benefits may defeat itself. It raises the tax burden on rich and poor alike and smothers the incentive to work. So the underlying basis of all economic benefits—production—is eaten away.

We in the U. S. haven't traveled as far down the stagnation road as Britain has. Taxes amount to about 26% of national income here as against about 45% there. But, unless we start soon to build up incentives to do better work, instead of whittling them away as we have been doing, we will catch up with Britain fast.

It's Late but Not Too Late

Can anything be done? Decidedly yes, *particularly by tax reform and reduction in the cost of living.* As far as interest rates are concerned, any large increase would raise excessively the cost of carrying our war-swollen national debt, and hence raise taxes. But some increase in what are now excessively low interest rates may well be both feasible and desirable.

Action on the tax front is the first order of business. Our jerry-built tax structure is the thing that is chiefly responsible for cutting the incentives to work harder. Two things are important: 1) Government spending must be pared to the bone; 2) The tax system must be completely overhauled to remove the shackles on all-out production.

The 56th editorial in this series, published in March, outlined major steps that need to be taken in remodeling federal taxes in order to increase incentives to individual and business enterprise. *The revenue bill now before Congress is no more than a short step in the right direction. Much more must be done to clear the way for high production and rising living standards.*

Lifting the blight which taxes now place on incentives would help cut the high cost of living. It would stimulate greater production and greater efficiency. But a further step is necessary. Part of the benefits of improved efficiency must be passed on to consumers in the form of lower prices.

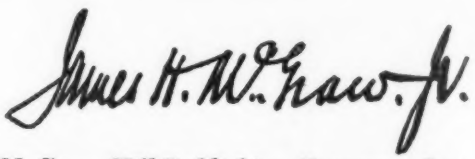
In the past few years we have been following precisely the opposite course. In many cases wages have been increased all out of proportion to increased productivity. Result—soaring prices and a severe squeeze of the consumer, to which some greedy exploitation of war-created shortages has also contributed.

To Give Ability a Chance

Our basic and most crucial problem is to get back on the track which leads to higher production and improved living standards all along the line. We got off that track in the 30's. Then, we started scrambling for larger slices of the same pie instead of trying to produce a larger pie. Now the process of getting back on the track is greatly complicated by the tremendous tax burden growing out of the war.

Yet it's not too late to turn back from the road that leads to industrial stagnation. As the statement in the center of the page shows, we could restore the odds of getting ahead to what they were in 1929. Cutting the federal budget to $25 billion a year and putting the tax structure in good order are the crucial first steps.

By taking these steps soon, Congress can go far to restore the incentives to hard work and efficiency which have been so largely washed away in the past 20 years. If they are not taken the American dream of getting ahead by hard and effective work will exist only in the history books, and our children will inherit from us an economic order without opportunity, without hope, without individual liberty.



President McGraw-Hill Publishing Company, Inc.

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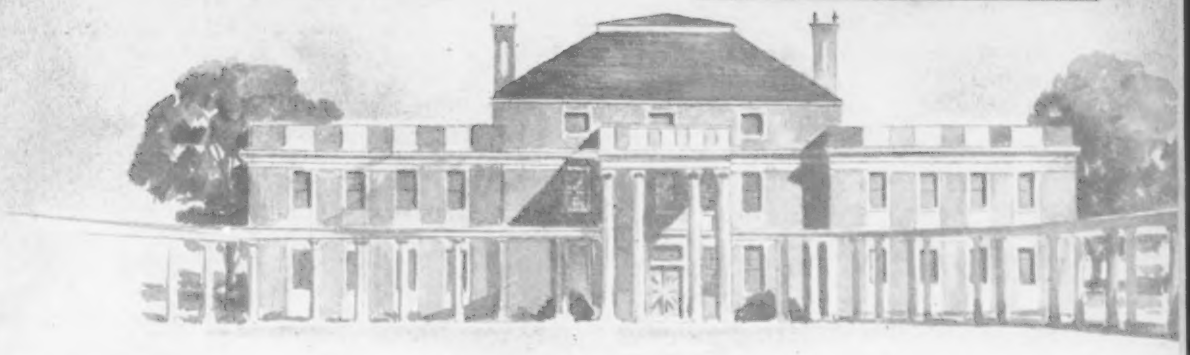


ITT *Combines* DEGREE GRANTING *With* RESEARCH

By MARTIN C. POWERS

Highlights: Institute of Textile Technology is unique type of degree-granting body—First academic year starts September—Facilities being enlarged at Charlottesville in accordance with long-range plan—Many research projects are underway.

STANDING AT THE THRESHOLD of its first academic year, with its initial group of students due to commence work in September, the Institute of Textile Technology is about to become an institution quite unique in this country. It will be the only post-graduate school in America, solely for college graduates, to exist independently of any college, university, or other undergraduate body.

Early this year the institute was authorized by the Virginia state board of education to grant master-of-science and doctor-of-philosophy degrees. Eleven of the first group of students have already been accepted and two or three are still to be chosen. Each student class will be restricted to 15.

Every student, carefully selected from accredited educational institutions, must possess a bachelor's degree in science or engineering, plus demonstrated aptitude and personality. Annual fellowships of $1,200 are provided, while student loans will also be offered, to facilitate the institute's effort to train men at the graduate level specifically for the textile industry, an objective never before undertaken by the industry.

Without fanfare, this textile research center in Charlottesville has been growing steadily and taking shape since it was chartered in 1944 by the state of Virginia as a membership corporation not for profit. Already its staff has recorded notable progress in research on a number of scientific problems for the industry, or on behalf of individual member concerns.

VISION MADE REAL. Whether he be a new student or a new staff member, the scientist who takes up work at the Institute of Textile Technology finds a dream come true in the quiet seclusion of the Piedmont hills.

For although theirs is one of the most highly competitive of industries, leaders in the manufacture of textiles have joined forces in a search for truth by making possible, in an ideal locale, unhampered scientific endeavor and simultaneous training of much-needed scientific minds. The institute's funds are entirely of private origin, income based on long-term contracts with eligible member mills. Thanks to such funds, research specialists are offered the utmost freedom in their explorations, along with finest laboratory equipment, a "tailor-made" physical plant, and an academic atmosphere relieved to large degee of class-room details which so often plague the college scientist.

The institute's original members chose Charlottesville deliberately. Free from industrialism and at the same time

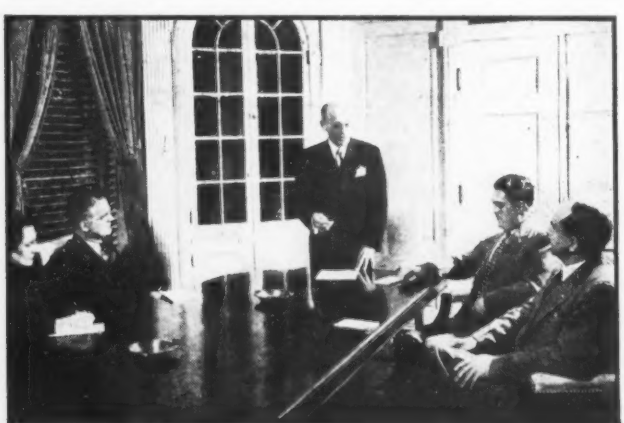
near the University of Virginia, the institute takes root in a setting impressive both for physical charm and historical associations. Moreover, its accessibility to Southern and New England textile centers makes it convenient for personnel from member mills and allied industries who visit the institute for conferences.

The idea that industrial research should go hand-in-hand with educating men in the principles and techniques of research has found prior expression, of course, in research foundations at universities, graduate fellowships provided by industry at educational institutions, and fellowships at research centers where no degrees are granted. This idea did not attain full realization, however, until the Institute of Paper Chemistry at Appleton, Wis., became the first to combine within its own organization the functions of industrial research and graduate training. One difference, may it be noted, between the Institute of Textile Technology and the Institute of Paper Chemistry is that the latter is affiliated with Lawrence College and grants its degrees through that college, whereas the former is a degree granting institution in its own right.

ORGANIZED IN 1944. It was the success of the Wisconsin project that prompted a group of cotton-system textile manufacturers, comprising a small "blue book" of the industry, to work out a plan in 1944 whereby it might set up in its field a duplicate of what the Institute of Paper Chemistry has for the pulp and paper industry.

Ward Delaney, an attorney formerly associated with the petroleum and paper industries, was invited to leave his post as associate director of the Wisconsin institute and guide the plan to reality. He now serves as president and executive head of the Institute of Textile Technology. Fuller E. Callaway, Jr., has worked closely with him from the start as chairman of the institute's board of directors.

In the intervening three years (during part of which time he was loaned to the federal government to perform war missions in Europe), Mr. Delaney has on the one hand stimulated the raising of funds to locate and build the institute's physical plant on a 15-acre estate near Charlottesville; on the other, he has mobilized a staff which now numbers 90 persons, including many scientists of wide recognition.



President Ward Delaney, of ITT (standing), discusses academic program with a group of his department heads (left to right), Miss Ruth Beedle, librarian; Dr. Lewis Larrick, director, department of physics and engineering; Dr. Joseph H. Brant, director of chemistry and biology department; and Dr. George H. Coleman, dean.

Under his direction, the institute is a cooperative research center, not a substitute for but rather an adjunct to the research departments of mills making up its membership. It functions as a tool to be used by the research and development divisions of those companies, a reservoir of manpower and facilities to which the textile industry and its allies may turn for assistance.

BUILDING PROGRAM. Its work and expansion, therefore, will follow a planned design. At present, a portion of the institute is housed in a former private residence of 16 rooms, which in time will serve as the administration building. The visitor finds an electronics laboratory crowded into the kitchen, a library bulging the walls of the east drawing room, a small-scale but well equipped machine shop in the garage. In downtown Charlottesville, a large temporary building affords much greater laboratory space.

Across formal gardens which lie in the rear of the administration building, a new applications building nears completion and will be ready for occupancy this summer. This structure, of red Monticello brick (brick made by the same concern which produced building materials for Jefferson's famed residence) stands three stories high and provides 35,000 sq. ft. of floor space.

On this side of the gardens will be laboratories, joined at their lower end to the applications building and at the upper end to the administration building by covered colonnades. The whole will thus form a quadrangle along lines of the prevailing colonial architecture so characteristic of "Jefferson's Country."

Already in operation is a new, fully equipped testing laboratory, which stands at one corner of the new applications building. Hence this unique and brand new "campus" is laid out according to a dynamic pattern: Project ideas will germinate in conference rooms or offices of the administration building, to be developed in theory and by test tube methods in the laboratories, then to be worked out practically in the applications building with its wide variety of mill equipment. Next, they will be thoroughly measured and checked in the testing laboratory and finally be returned as completed projects to the administration building for release to the industry or presentation to the private mill member for whom they were undertaken, as the case may be.

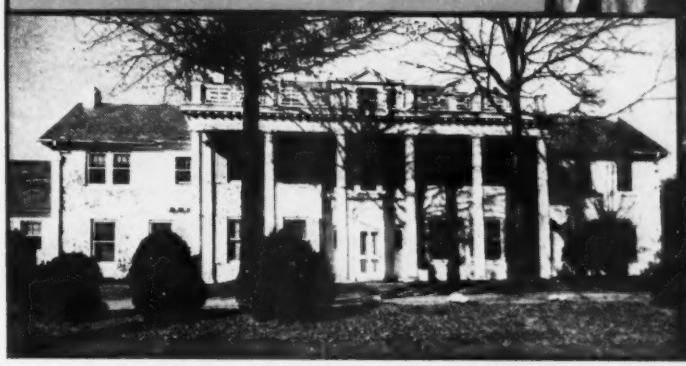
MERCHANTS GIVE LIBRARY. Eventually an auditorium designed for large conferences and exposition of completed projects is to be constructed at the east end of the administration building. In juxtaposition at the opposite end of the residence, a library building will soon appear, the gift of a group of New York's Worth Street merchants who own mill interests and who market textiles.

Along with its research and educational commitments, the institute's program encompasses the establishment of complete library facilities. Some 7,000 volumes have thus far been accumulated in the continuing effort to assemble all available scientific and technical literature pertaining to textiles and textile processes. Daily, members of the library staff are busy making literature searches which are such essential preliminaries to an attack on any scientific problem; for, in Mr. Delaney's words, "A literature survey is as vital to intelligent research as reconnaisance is to an army."

Operations of the institute follow four separate but closely coordinated paths. Dr. George H. Coleman, formerly professor of organic chemistry at the University of Iowa, serves as dean and directs the academic phase. Chemical and biological research, directed by Dr. Joseph H. Brant, who for nine years was an executive of the

New campus takes form at the Institute of Textile Technology, Charlottesville. At left is architect's drawing of new applications building. Construction started in 1946 and is now nearly complete, as may be seen by photograph below which shows the new building in the background. In the picture, Ward Delaney, president of ITT, is pointing out the new applications building, on the architect's plan of the campus, to J. Frank Doubleday, assistant to the president.

Photo below shows the administration building of the institute, formerly a 16-room residence, centered in a 15-acre estate around which the "tailor-made" campus of laboratories, library, auditorium, and applications buildings are being erected in colonial architure similar to the nearby University of Virginia and mansions of "Jefferson's Country."



Tennessee Eastman Corp., delves into properties and reactions of fibers and materials used in dyeing, finishing, proofing, or otherwise adapting fibers and fabrics to their many end uses.

Dr. Lewis Larrick, previously associated with the B. F. Goodrich Co., is director of physical and engineering research into the individual and mass behavior of fibers and auxiliary materials in all manufacturing operations of textile production; as well as into all aspects of physical testing, standards, control devices, and new or improved machine designs.

EDITORIAL DEPARTMENT. Worthy of special note is the editorial program directed by Dr. Julian F. Smith. His department serves the institute staff and member mills by aiding them in utilizing published technical information and by editing the institute's own publications. One of these, the *Textile Technology Digest*, is a monthly review of all current literature (foreign as well as domestic) pertaining to textile science and technology. Its abstracts present factual summaries without reflecting the views of the staff or members of the institute.

Research undertaken by the Institute of Textile Technology may be classified under five general headings: (1) Fundamental, as a background for applied research investigations. (2) Academic, carried on by students for masters' theses or doctors' dissertations. (3) Industrial research on general problems, financed from institute funds and reported to all members. (4) Industrial research on specific problems presented (and financed) by a mill or group of mills as sponsor, with results reported solely to the sponsor. (5) Industrial research performed for an allied industry or government agency.

To illustrate the scope of subject matter gaining the attention of the institute's staff, the following projects currently under way are cited. These topics demonstrate, incidentally, how scientists from more than one field are often required to work as a team to accomplish an objective.

ACTIVE PROJECTS. Some active research projects are: Cellulose chemistry, including a broad basic study of cellulose structure; dyes, dyeing, and tests for fastness; chemistry and physics of natural and artificial fibers; chemical, physical, optical, and electrical analysis and testing of fibers and textile chemicals; detergency and soiling; materials handling in textile operations; stream sanitation and waste disposal; microscopy; warp sizing; finishing agents; applications of cellulose derivatives and resins to yarns and fabrics; protective finishes in flameproofing, waterproofing, shrinkproofing, and biological deterioration; studies of limitations of textile machinery and the possibilities in new, revolutionary approaches to new processing; applications of physics, electricity, electronics, and engineering to processing equipment.

As the institute prepares to welcome its first group of students this fall, it offers a plan of basic training which stresses fundamentals rather than details of manufacturing

operations. Faculty members consider it more useful, for instance, to teach a student how to detect and measure all the effects of a finish on the properties of a yarn or fabric than to train him in known methods of applying finishes. If he learns precisely what his chemicals do to a yarn or fabric, he will be in a commanding position for finding a better effect at less cost.

Again, to show a student the micro-structure of a fiber before, during, and after abrasion is deemed more desirable than to teach him the use of a mechanical abrasion tester. It may be he will find both studies necessary, but if he knows how and why fiber fails under abrasion, he has a far better chance to improve abrasion resistance than if he has learned only how to measure abrasion after it occurs.

Dean Coleman points out that fundamental training of this sort is to be supplemented by education in textiles along three balanced channels—course content, student research, and summer work in mills.

THREEFOLD LINE OF ENDEAVOR. Illustrative matter taken directly from the industry is utilized in courses on fundamental aspects of mathematics, physics, and chemistry. As for student research, this is distinctly apart from industrial research projects of the institute. Students will be encouraged to seek new principles as well as new applications of old principles. Their topics, of course, will be pertinent to the industry.

Hence, while one student might be striving to apply a familiar principle of detergent action to a hitherto unknown fiber, his colleague might be seeking to determine unknown laws governing the relations between a fabric and a synthetic finish.

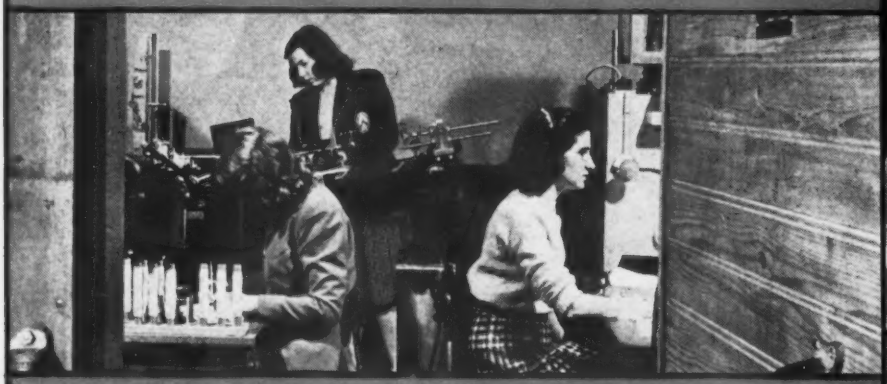
Working closely with the students on projects of this kind will be scientists drawn from the institute's research staff. Thus a free exchange of ideas, a mutual stimulation, is encouraged.

Each research fellow is required, according to entrance stipulations, to spend each summer in a mill of a member company. Successive summers must be spent with different companies (always without commitments as to employment after graduation). This arrangement, by the way, provides the student an opportunity to increase his income beyond the $1,200 of his yearly fellowship, as he will receive pay at the level prevailing for the type of practical mill work he undertakes.

It may be seen that this summer work stands to benefit the academic program in at least two ways. The student will attack his academic tasks with new interest and proficiency, with a better understanding of mill problems. Conversely, his perceptions will be the sharper as he applies his academic knowledge to mill situations.

ULTRA-MODERN EQUIPMENT. As some of the accompanying photographs indicate, the new student will find numerous examples of ultra-modern laboratory devices to

This is close-up of a hydrostatic-pressure testing device at the institute, used to gage the water repellency of cloth. The instrument measures the column of water necessary to force drops through the sample of cloth. Speed or pressure of application may be controlled. In the picture, a mirror is seen under the sample, revealing water drops as they begin to appear.



This is the scene that greets the visitor as he enters the refrigerator-type door leading to the institute's standard testing laboratory, first of the buildings to be erected on Charlottesville's new "campus." The laboratory, completely air conditioned for temperature and relative humidity, contains the best available models of accepted textile-testing equipment, as well as a number of new devices invented and built on the premises by staff members. In the left foreground, Mrs. Isabel Chamblin operates an inclined-plane tensile-strength tester, which records the breaking load of small yarns, in terms of grams, up to 2,000-gram capacity. In the right foreground, Miss Lelia Echols operates an air-permeability tester, while in the background Mrs. Gayle Pressman is conducting tests on an IP-4 tensile-strength tester.

Harry A. Mereness, who has charge of the laboratory, operates the yarn-stiffness tester which he invented, to determine the stiffness values imparted to yarns by sizing compounds and finishes.

aid his studies at the institute. Space allows mention of only a few. There is the laboratory polymerizer which forms a part of the apparatus being used in the institute's high-polymer program. Compounds when placed in metal-jacketed bottles are uniformly shaken as the bottles are rotated in a thermostatically controlled water bath. This transforms or polymerizes the material into new substances composed of the same basic elements by weight but possessing new physical properties, principally associated with an increase in molecular weight.

Experiments with this equipment may contribute to the development of new or improved finishing treatments for yarns and fabrics. Apparatus of this type permits a large number of experiments to be run simultaneously and therefore reduces the time necessary for their completion.

One of the instruments unique to the institute is the yarn-stiffness tester, designed by Harry A. Mereness, in charge of the testing laboratory. The device determines the stiffness values imparted to yarns by sizing compounds and finishes. Also to be found are the standard twist testers, inclined-plane tensile-strength testers, conditioning ovens, the Pressley fiber tester, air-permeability test equipment, and similar installations of a complete testing laboratory.

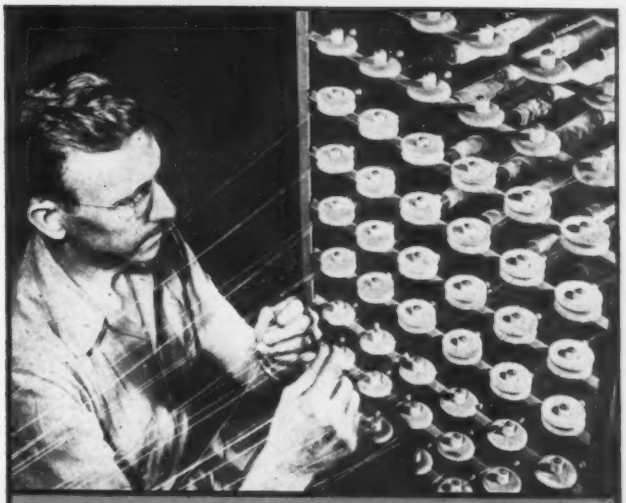
Among the more spectacular research projects is a study of water resistance of cotton and other fabrics. Numerous water-repellent finishes are under observation, as well as physical characteristics of cotton fibers as related to the problem of shedding water. Scientists at the institute hint that new applications of geometry in the construction of fabrics may bring about improved-resistance characteristics. Experiments make use of testing equipment with a rain chamber. A stream of water drops, falling down a large glass tube, splashes on a sample of cloth mounted in a glass chamber at the base. The time required for a specified volume of water to pass through the sample is indicated automatically. The results of this test have been found to correlate well with results of tests on living subjects in actual rainfall.

NEED FOR TRAINED MEN. On the basis of past experience in the type of research and education being undertaken by the Institute of Textile Technology, Mr. Delaney and his associates consider it not unlikely that many of the graduates of ITT will eventually move into managerial rather than research positions.

Never before has the industry plunged so deeply into all fields of science affecting it. Mills great and small, North and South, are spending at a rate of $100,000,000 a year for plant renovations, new machinery and research, according to the Cotton Mills Information Service.

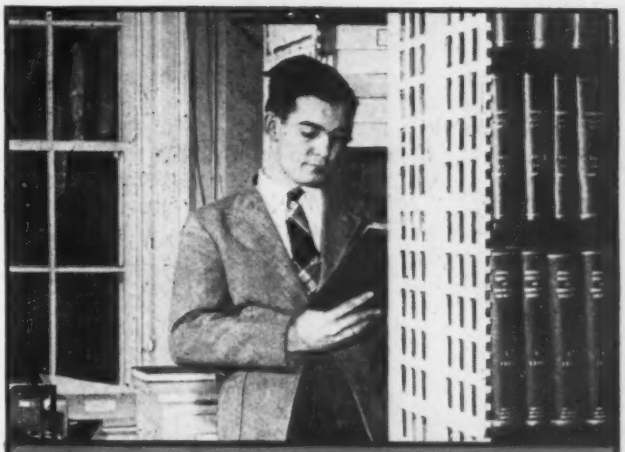
In the post-war return to free competition, leaders of the industry realize their success depends in large measure on their ability to offer to consumers products designed for certain end-uses that perform their required functions. The industry, therefore, sees an increasing need for executives who understand the science back of their manufacturing operations and can appreciate the research effort needed to produce a required result. To that end, the Institute of Textile Technology seeks to train men so that they are thoroughly qualified for research; when their qualifications lead them into positions of managerial responsibility, the industry gains so much the more.

Such, then, is the philosophy at the heart of this new research center which the industry—and thoughtful men and women of America—will watch with increasing interest. As Mr. Delaney aptly says, "Primarily, we are an educational institution; for on people, trained people, depends the future of this country and this industry."



Front Cover Photo

The illustration on the front cover of this issue shows warp yarns being drawn into a laboratory slasher in connection with studies of sizing individual ends. The institute currently is making a scientific study of all aspects of warp sizing—what specifically happens to yarn during slashing, physical and chemical effects on the fibers in the yarn, whether more economical sizing agents may be developed, also the possibilities of permanently improving yarn during the slashing process. "Active research is now in progress seeking a size material which may be left on the yarn, thereby eliminating the desizing operation; or finding a means of easier and cheaper desizing; or going still further, developing a yarn which will weave well without any sizing material," reports Dr. Joseph H. Brant, of the ITT staff.



A glimpse of the ITT library is shown in this picture of a research assistant seeking information preparatory to starting work on a research project. The institute is gathering all available literature pertaining to textiles and textile processes. Construction will soon be started on a separate library building, the gift of a group of New York's Worth Street merchants.

LONG DRAFT Must Retain Fiber Control

HIGHLIGHTS: *Spinning draft of 300 obtained experimentally, but conservative drafts provide better short-fiber control — Low pressure area outside bite of rolls is crucial area for short fiber—The future of cotton-drafting limits depends upon fiber control in low-pressure area.*

* * *

By SETH CARTER

* * *

LONG DRAFT is a relative term which is used loosely to describe a long range of drafts from the comparatively short spinning-draft of 14 to an ultra long and experimental spinning-draft of 300 used in spinning yarns direct from sliver. The design and development of modern devices and appliances which permit the extension of drafts has also resulted in delivery of a more uniform strand than that delivered from regular drafting. Whether future extensions into commercially acceptable drafts of 300 will permit mills to draft drawing-sliver into yarn will depend upon the solution of many problems. Foremost among these problems is the control of fiber lengths during drafting.

Better fiber control is necessary for effective long drafting and this control assures improved quality of yarn. Certain limitations have always existed in the amount of draft that can be used between two lines of regular drafting rollers; but attempts to overcome these limitations in the past have led to the addition of many devices and auxiliary appliances which not only increase the capacity of drafting units but also improve the quality of yarn produced by these units.

PATENT APPLICATIONS NEARLY 100 YEARS OLD. While the successful and general application of some type of long-draft device to spinning frames may be considered of fairly recent occurrence, the need of some method of extending the spinning draft has long been recognized by spinners and machine builders. Proof of this fact lies in the records of the U. S. Patent Office which contains applications for patents dated nearly 100 years ago. The applications described claims for long-drafting equipment, and many of them recognized the importance of better fiber control if spinning drafts were to be extended beyond conventional limits.

Within the mills themselves, many ingenious and resourceful spinners have, for years, tried various arrangements and devices to overcome the faults and limits of regular roller drafting. Some of these contrivances were crude and ineffectual, while others helped to tide over the temporary tight spots of poor-running work and cockled yarn which were caused by variations in length or character of cotton processed.

THE FIRST SLIP ROLL. Floating the middle top-roll (removal of weight) was often practised as an emergency measure to prevent the pinching of fibers between the front and middle rolls. This was the original application of the slip-roll principle. Further development can be recognized in the leather-covered middle top-roll and in the thin, tubular-metal top-roll.

The defects of some slip-roll devices soon became apparent. 1. They must be set within the staple length of the cotton in order to effect a control of shorter fibers. 2. Different yarn numbers require different weights on the slip roll. 3. Pinching of long fibers causes cockled yarn, and breakage of fiber means loss of yarn strength. 4. The weight of the slip roll is not sufficient to permit proper break-draft-

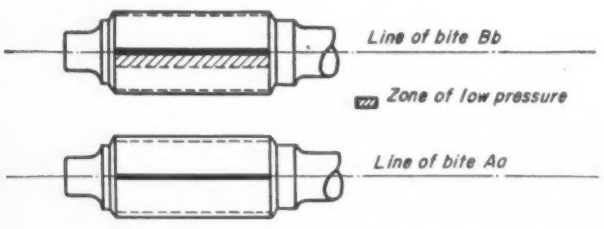


Fig. 1. The heavy black line represents bite of top and bottom rolls. The shaded area shows the low-pressure, retardation control zone extending a short distance from the contact bite. This control pressure is communicated to all fibers in the cross section of the strand by contact with adjacent and surrounding fibers, and is considered a crucial area from the standpoint of short-fiber control.

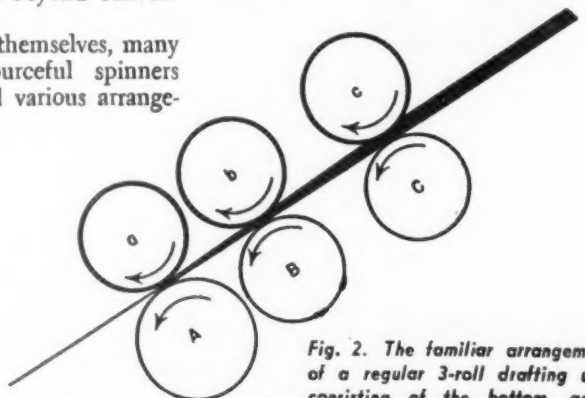


Fig. 2. The familiar arrangement of a regular 3-roll drafting unit consisting of the bottom, gear-driven, steel rolls, A, B, C, driving by weighted contact the top cushion-rolls a, b, c. A short break-draft is provided between rolls B-b and C-c, while the main draft between A-a and C-c generally is limited to a maximum of 12. Setting of rolls A-a to B-b exceeds the length of the long fibers to prevent pinching, breakage, and cockled yarn.

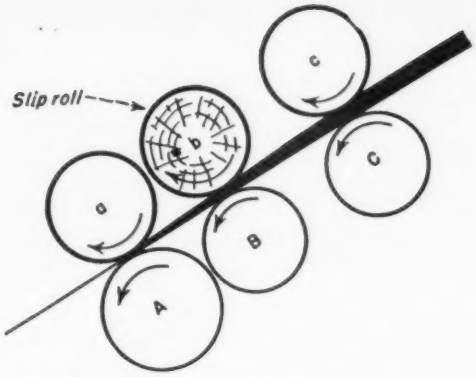


Fig. 3. Position of light-weight slip roll b (wood or tubular metal) set close to front rolls A-a is within the staple length of the fibers and forms a low-pressure retarding zone in contact with bottom roll B. This prevents plucking of medium short-fibers and permits slippage of longer fibers under the slip roll without fiber breakage. The diameter of rolls B-b limits close setting to rolls A-a, and this prevents proper control of very short fibers. Light-weight roll (b) does not permit proper break-drafting between rolls B-b and C-c. Heavier strands of roving require heavier slip rolls b.

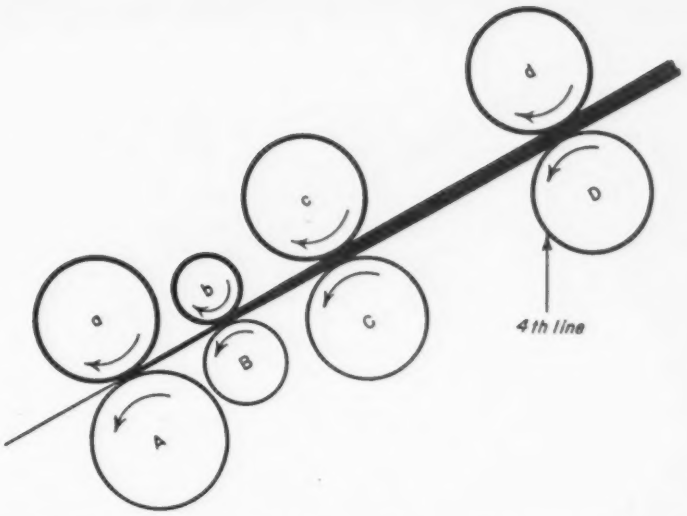


Fig. 4. A diagram of a 4-roll drafting system which overcomes three objections to 3-roll slip systems. The small diameter of slip roll b permits close setting to roll a, and increases control of shorter fibers. The positively driven rolls C-c assure effective break draft between middle rolls C-c and back rolls D-d. Provision is made for increasing the weight of roll b by the addition of small disks to take care of heavier strands of roving.

ing between the middle and back roll, and the addition of another line of rolls is necessary to assure uniform break draft.

THE BELGER TOP ROLLS. Old-time spinners claim that they improved the control of short fibers by placing double layers of flannel under the leather covers of the top rolls, and the Belger cushion-top roll was a commercial development of the principle. Better control and longer drafts

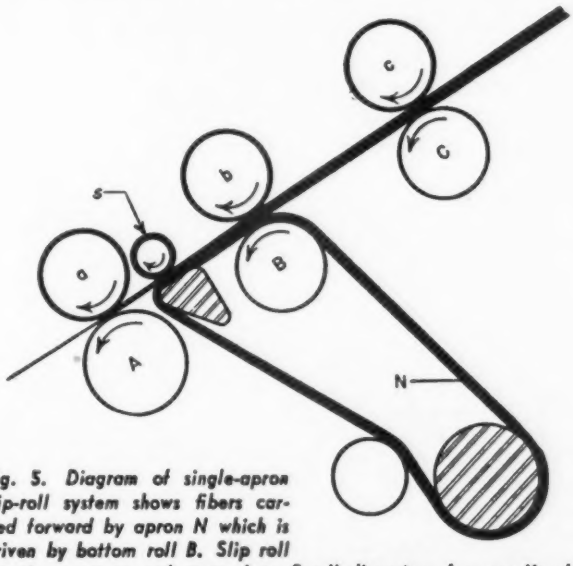


Fig. 5. Diagram of single-apron slip-roll system shows fibers carried forward by apron N which is driven by bottom roll B. Slip roll s rests on apron and apron bar. Small diameter of s permits close setting to front roll a. It holds ribbon of fibers in contact with apron, prevents plucking of short fibers, and permits slippage of long fibers between apron and roll. On coarse yarns, it is advisable to increase weight of slip roll to increase control of fibers between slip roll and roll b.

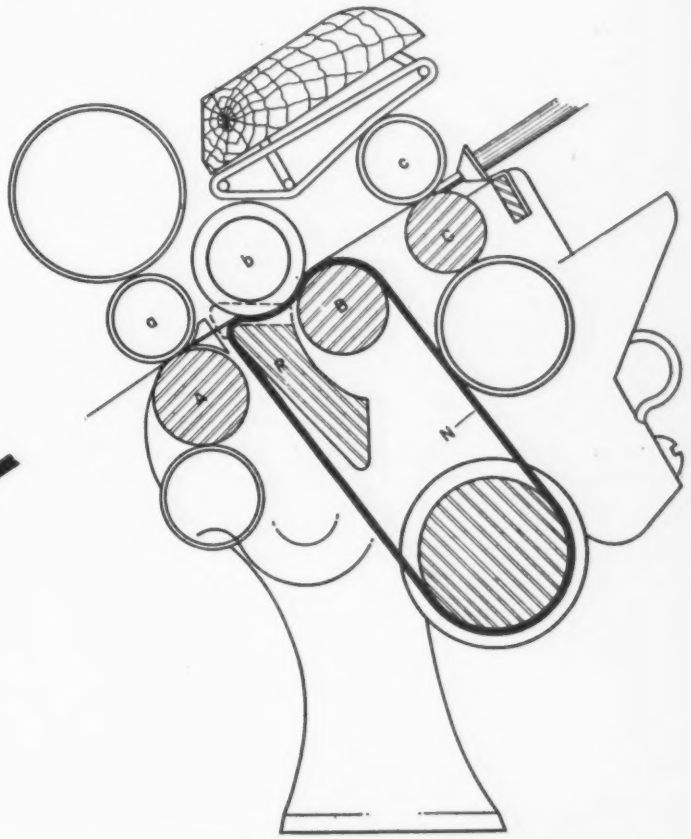


Fig. 6. Diagram of the single-apron system substituting positively driven roll b for slip roll. The apron N passes over and is driven by roll B and then passes over nose of apron bar R set close to front roll A. Top roll b rests on apron in contact with middle roll B. The apron thus curves around the lower side of roll b. The fibers pass between apron and part of lower circumference of roll b. This furnishes control of fibers from bite of rolls B-b through slight pressure of apron on b to forward edge of apron bar close to front roll. This design improves the previous design of single-apron light-weight slip-roll systems. Roll b and apron N furnish control on both top and bottom of ribbon. Bite of rolls B-b assures positive break draft. Short fibers are prevented from slipping between contact of apron and roll.

were facilitated, but the useful life of the rubber cushions was short.

Other more or less radical designs were used in attempts to improve fiber control and to extend drafts. Rolls were built of metal washers evenly spaced and mounted on arbors. The spaces between the washers were designed to retain the fibers in narrow parallel rows during the drafting process and to give better fiber control. Another design used rolls covered with fine wire, such as card wire, to control the fibers. For various reasons, none of these devices was adopted generally.

DRAFTING IS A COMPLEX PROBLEM. The operation of drafting fibers is not so simple as it appears. There are many factors involved. For example, the variation in the lengths of fiber contained in a specimen of cotton as shown by a fiber-array diagram indicates plainly the scope of the problem as far as cotton is concerned. The lengths of fiber in 1-in. classified-length cotton vary from a maximum of 1¼ in. to a minimum of less than ⅜ in. Yet, all these fibers, long and short, must be under reasonable control if uniform drafting and even yarn are to be produced from the long-draft system.

Another problem arises from the different pressure areas created by roller drafting. There is a narrow line of high-pressure and fairly positive control of fibers at the bite of the rolls where the top and bottom rolls would be in contact if no fibers were held between them. The pressure on the stock gradually diminishes as the distances from the line of bite increases, and another pressure area, a low-pressure one, is formed as shown in Fig. 1.

The low-pressure area is important as a control of shorter fibers, since it is communicated to all fibers in the cross section of the strand by contact between adjacent fibers. The pressure on the middle rolls tends to retard the ends of fibers being drawn away, while the pressure area of the front rolls tends to draw the front ends of the fibers away faster than released by the slower-moving middle roll. Fibers which are long enough to be under the influence of both rolls at the same time are under tension sufficient to straighten and parallelize them but not positive enough to break or cockle.

LONG DRAFT EXTENDS THE LOW-PRESSURE AREA. It can be seen that the two lines of rolls on the conventional system shown in Fig. 2 cannot be set closely enough to extend the pressure area to the bites of the rolls for complete control of all fibers without pinching or breaking the long fibers. Similar lack of low-pressure control causes plucking or bunching of short fibers. Thus, most long-draft systems attempt to extend the low-pressure area or retarding zone as far beyond the bite of the rolls as possible in order to facilitate short-fiber control.

The various methods of long-draft spinning shown in Figs. 3, 4, 5, 6, and 7 are in commercial use today. All of them in some way or another attempt to improve fiber control. The experimental design shown in Fig. 8, not in general commercial use, has a total draft of 300.

THE FUTURE OF LONG DRAFT. The importance and value of long-draft spinning and the possibilities of further improvements are realized by machine builders and designers. Constant research and experiments continue for the development of new methods and extended drafts, with several concerns reportedly in active development of direct spinners particularly for synthetics.

A firm conviction has long been held by many progressive mill men that the construction of drafting units to make medium and fine counts of yarn direct from drawing-sliver is feasible and that this result is the ultimate goal of all long-draft research. With varied lengths of fibers such as found in cotton, one of the foremost problems in further extension of draft is that of controlling the actions of these varied fibers during the drafting process.

Fig. 7. Diagram of the double-apron drafting system. Leather aprons are driven by rolls B-b and pass around an apron bar close to front rolls A-a. The strand is held under light uniform pressure between top and bottom aprons. This prevents plucking and bunching of shorter fibers. The pressure being applied on top and bottom of strand insures that fibers are held in correct position and are drawn forward in proper order by front roll. The setting of rolls B-b to A-a always exceeds the length of the longest fibers. This prevents pinching or breakage of fibers or cockled yarn. The break draft is positive and takes place between two lines of weighted rolls B-b and C-c.

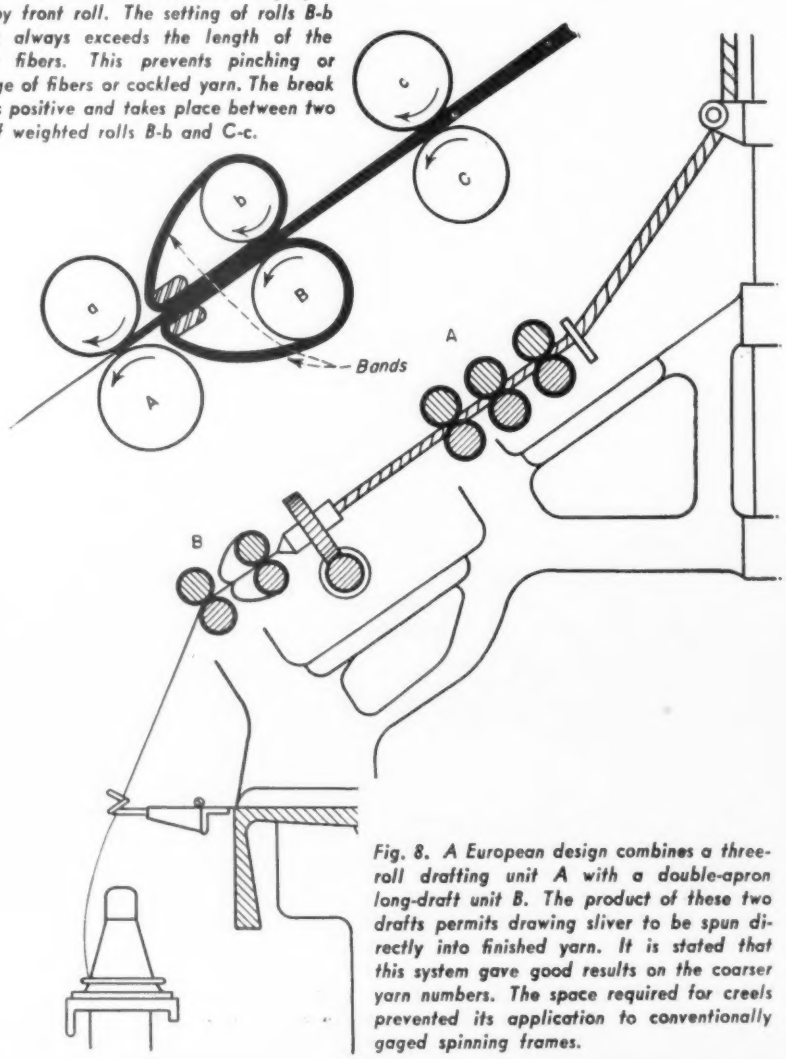


Fig. 8. A European design combines a three-roll drafting unit A with a double-apron long-draft unit B. The product of these two drafts permits drawing sliver to be spun directly into finished yarn. It is stated that this system gave good results on the coarser yarn numbers. The space required for creels prevented its application to conventionally gaged spinning frames.

Fig. 1. A typical classroom scene at Botany Mills' labor-relations school illustrates the point that students include both management men and workers. Shown here is a class listening to a lecture by Maj. Gen. Irving M. Phillipson (retired), director of industrial relations. At the table are three union representatives who are also members of the school faculty.

LABOR-RELATIONS School Set Up by Botany Mills

HIGHLIGHTS: *Faculty of labor school includes management men and representatives of TWU—School is designed to teach labor relations to all employees—Hoped-for results include quick and equitable settlement of labor differences in the grievance stage.*

AS A MEANS OF IMPROVING RELATIONS between labor and management at Botany Mills, Passaic, N. J., a school to improve industrial relations has been established, sponsored jointly by the Textile Workers Union and the plant management. Clad in overalls and in business suits, the students listen to lectures designed to prevent grievances between shop foremen and union stewards from festering into misunderstandings, disputes, slowdowns, and strikes. Students come from all parts of the organization; the course is designed to train all employees of the company in labor relations.

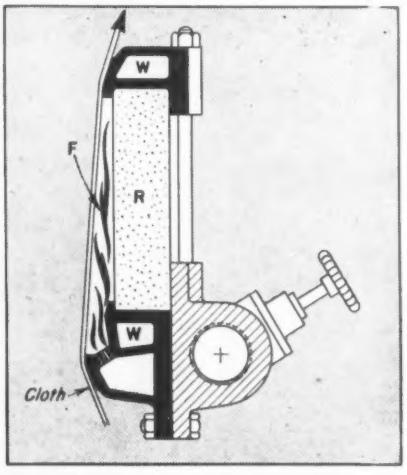
The first graduation exercises of the training school were held May 27. Diplomas were conferred upon 381 persons by Colonel Chas. F. H. Johnson, president of Botany, and George Baldanzi, of the Textile Workers' Union.

Fig. 2. Joseph Ashmore, machine-shop supervisor, consults with Maj. Gen. Phillipson in one of the classes of the Botany labor-relations school. The school is designed to promote quick and equitable settlement of grievances between supervisors and stewards before differences reach dispute stage.

Fig. 3. The faculty of the Botany Mills' labor-relations school shown includes both management men and Textile Workers Union representatives. This photograph of the faculty shows (left to right): Maj. Gen. Phillipson, director of industrial relations; Miss Raye Hudson, educational director and a union member; Charles H. F. Johnson, Jr., vice president and general manager; Col. Charles H. F. Johnson, president; Charles Serraino, business manager of TWU in Passaic area; Norman Hopmayer, director of training; and Michael Timko, business agent of TWU.

New System Speeds and Improves

***HIGHLIGHTS:** Installation at Fair Lawn does better job in one run than previous equipment did in two to four runs—Gas is proportioned to air at burner—Cloth forms one side of combustion chamber—Radiant as well as direct heat used — High speeds are possible.*



Cross-section of burner showing water-cooled heads (W), refractory inlays (R), and flame distribution, (F). Cloth may travel over the singer horizontally or vertically, as it does at Fair Lawn Finishing.

By JOSEPH C. MOORE

SINCE DECEMBER, singeing speeds have been upped four to 16 times and singeing uniformities improved by a new installation of so-called "radiant-flame-compression" burners and premixing equipment at the Fair Lawn Finishing Co., Fair Lawn, N. J.

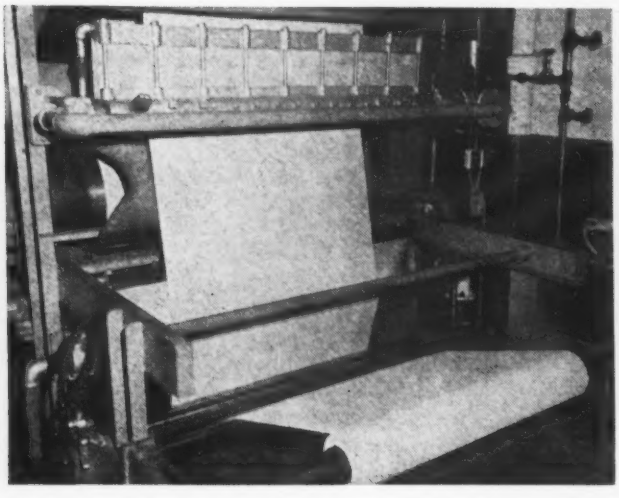
Rayons are finished in considerable quantity at Fair Lawn; and, in order to do a satisfactory singeing job heretofore, it has been necessary to pass the cloth over the burners from two to four times. Higher heat inputs and faster speeds damaged the materials—the process had to be performed in steps. Obviously, even the slightest charring would damage the material, and unremoved nap would spoil the quality of the dyeing. The burners previously in use did not always burn evenly, and it was difficult to hold even results across the web.

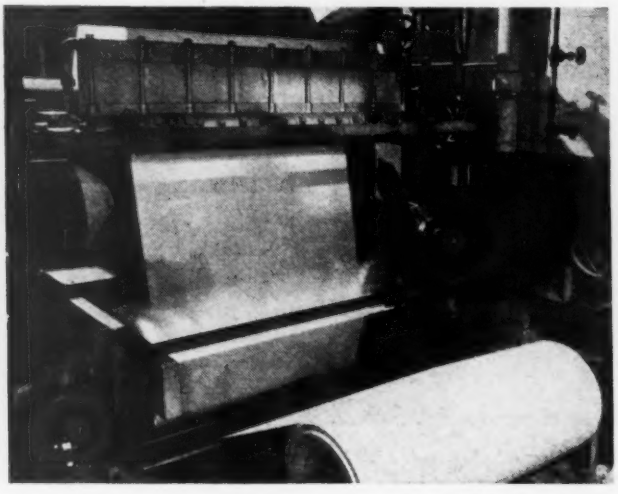
In view of these problems and the success of new radiant-flame-compression equipment at the Richmond Piece Dye Works, of Richmond, Va., an affiliated plant, it was decided to design new frames adapted to the local production at Fair Lawn and to test the new burners.

THE NEW SYSTEM. The singeing and control equipment consists of two of the new Kemp radiant flame-compression-burners each 61 in. long, two index cocks, two firechecks, two water valves, one main gas-and-water valve, two pressure governors, two carburetors, and two turbo compressors.

The unsinged rolls of cloth are supported by the usual shafts secured to the frame. Cloth is threaded through a tension control mechanism and then over a burner which singes one side of the cloth. Exhaust hoods cover each burner to draw off nap that has been carbonized. From singe burner No. 1 the cloth travels vertically to a second burner which singes the reverse side of the cloth. The vertical arrangement saves considerable floor space over the usual horizontal burner arrangement. After leaving burner No. 2, the now completely singed cloth travels over a water-cooled drum at 70° F. After passing through a second tension control (tension being adjusted by an operator at each end of the process, as the size of the roll changes the pull on the cloth), the cloth is rewound and ready for dyeing, shrinking, and other finishing operations.

The burner heads are of cast-iron with adequate water chambers to assure a cool burner regardless of the rate of firing or the high temperature in the combustion chamber. The main gas-and-water valve regulates the water flowing to the heads according to the gas consumed—thereby avoid-





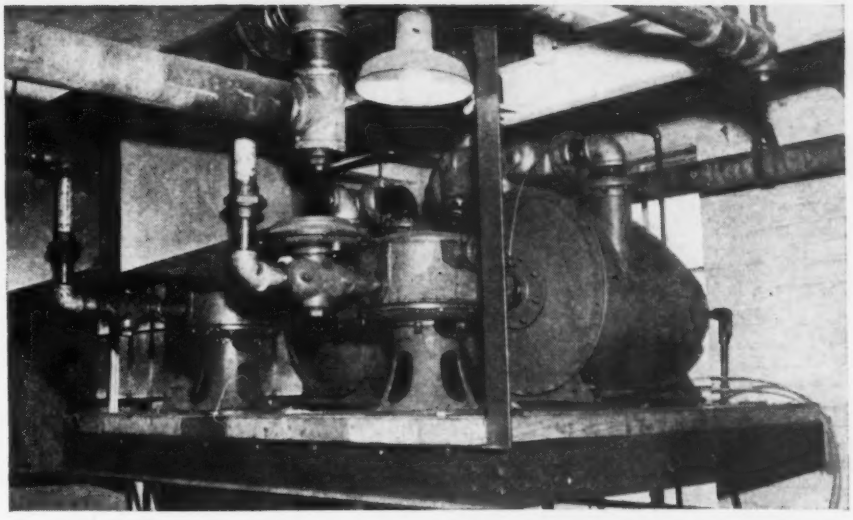
Low flames are used in singeing light-weight cloths. Cloth is threaded through tension control rods, passes across burner No. 1, travels vertically to burner No. 2 which singes the reverse side, is wrapped around a cooling drum and finally is rewound and ready for the next finishing step. Higher flames and greater speeds are used in singeing heavier cloths. Picture at right was taken at night.

RAYON-FABRIC SINGEING

ing use of unnecessary water. The combustion chamber in each burner is recessed so that the cloth, tightly drawn over the raised edges of the heads, actually deflects the flame and forms one side of the combustion chamber. As a result, the singe is very close and uniform, while high speeds are possible. Burners are not of all-metal construction but are fitted with insulating refractory inserts for the purpose of providing radiant heat to the cloth as well as the heat derived directly from the actual flame. As there is no free oxygen in the combustion chamber, the nap is carbonized rather than burned, and the resulting ash is carried away with the gases of combustion through exhaust hoods which cover each burner.

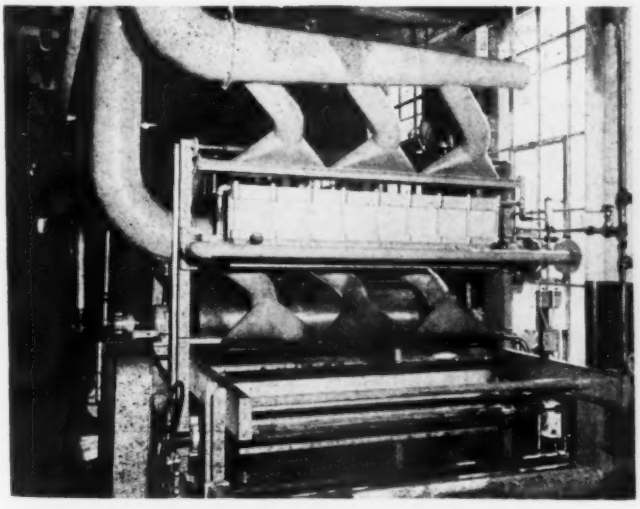
CONTROLS ARE SIMPLE. The size of the flame is governed by an index cock. The plant developed its own flame settings, and in general two elements govern this important factor: (1) the type of cloth being singed, and (2) the speed at which it is being singed. At Fair Lawn three index cock settings are commonly used—No. 5 for light-weight goods such as fuji-type broadcloth, No. 7 for medium weights such as Lluana, and No. 9 for heavier cloths such as acetate-rayon bengaline. These settings are, of course, subject to change depending on such factors as fiber mixtures in the cloth. There is a total of 20 settings on the index cock, so that virtually any type of cloth at any rate of travel can be properly singed. The higher settings are used at high speeds and/or with heavy cloths—these con-

(Continued on page 208)

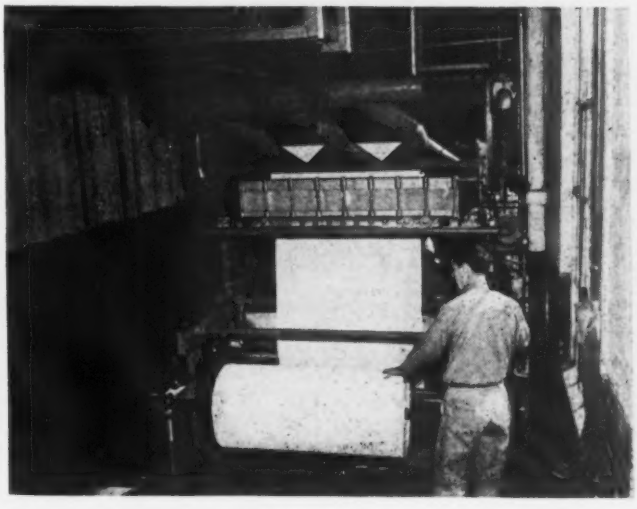


Two pressure governors, two carburetors, and two turbo compressors are located on a platform that is suspended from the ceiling. One unit is a standby for emergency operation.

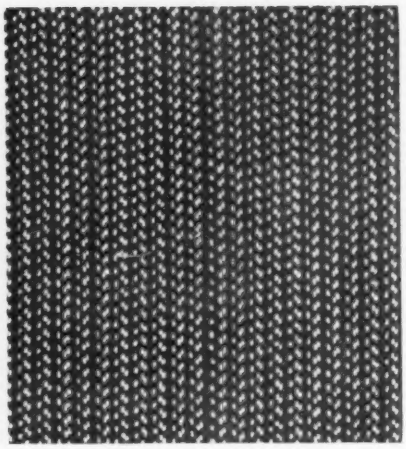
Photograph at right shows water-cooled drum which cools cloth as it leaves the burners.



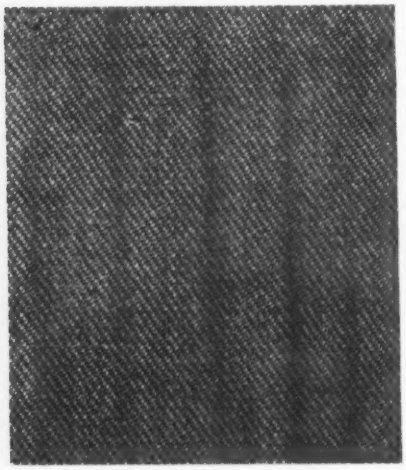
Over-all view shows unthreaded machine. Exhaust hoods, burners, and water-cooled drum are clearly visible. This is the same end of machine shown on the opposite page.



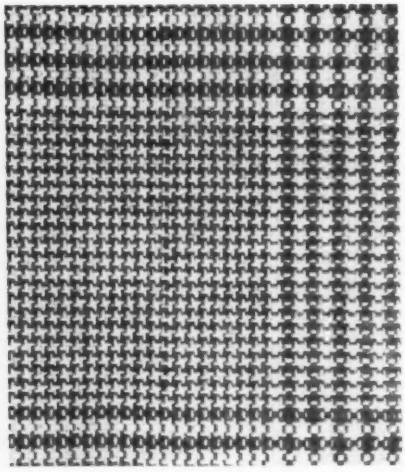
Operator adjusts tension rods as cloth feeds through the machine. Chains in foreground are from hoist for lifting rolls of cloth. They are suspended in this shot in order not to obscure the machine.



Reed marks, such as this one, are caused by faulty dents. Frequently, weavers damage dents by excessive spreading of reed wire in drawing in an end.



Fabrics which have a high number of ends per inch, such as this gabardine, are particularly liable to warp streaks caused by bunching of heddles. One cure is to draw warp on sufficient number of harnesses to reduce overcrowding of heddles.



Rolled ends can be an obvious fault when the affected ends are of different colors. Rolled ends can be eliminated by careful attention to reeding, warp tension, and shedding time.

Fewer Worsted FABRIC DEFECTS Can Now Be Allowed

HIGHLIGHTS: *Imperfections passed without question during period of shortage caused deterioration in quality—Elimination of weaving faults requires vigilance plus careful analysis—Lace lines must be properly drawn on loom to avoid cracks and breaks—Defects caused in finishing can simulate weaving faults.*

By F. H. BROOK

IT IS WELL KNOWN that manufacturing standards of worsted fabrics fell off during the war years. But now that wartime limitations are gradually disappearing, a tightening of manufacturing standards is clearly in order. The following notes may be of some value in indicating the sources of many of the common defects in the weaving of worsteds, and it is hoped that they may at least serve to refresh the memories of many and to aid in preventing the recurrence of these defects.

WARPWISE DEFECTS. Finished fancy fabrics occasionally show fairly wide longitudinal bands running the entire length of the piece; usually these bands have deep shading at one edge, grade off into the ground, and then repeat at regular intervals. Careful measurement will prove that the width of the bands corresponds with the width of the yarn section used in sectional warping and that the number of bands is the same as the number of sections. This fault is caused by the careless setting of the distance and angle of build-up of the warping section, which allows some ends to mount over others in the same layer; the damage will show in all pieces woven from the particular loom beam involved. It is usually impossible to detect this fault before weaving, but some glaring instances may be picked up as high or low areas at the end of each section; and in these cases, rebeaming and opening out may help to reduce the damage.

Reed marks are caused by damaged reed dents and appear as lines running through the fabric from the point of damage. The faulty dent can be identified by taking the distance from selvage to fault and applying it at the loom; it should be immediately detected by a thorough examination of the goods. Reeds are often damaged in this way by weavers who force the dents widely apart when taking up broken ends. When the damage is caused by a trapped shuttle, the reed is often very badly bent concavely from the fell of the cloth; and this will produce a damaged area of the same approximate width as the length of the shuttle body. As the reed is bent back from the fell when there is damage of this sort, fewer picks will be put in at the beat up and, in addition to being marked with a wide streak, the cloth may appear "cockled" at this point, with distortion of both warp and filling. Unless a skilled reed repairman is available when a smash of this kind occurs, it is often safest to have the entire warp re-reeded and either re-center old reed or use a new reed.

BUNCHING OF HEDDLES. This fault is hard to trace. It appears particularly in such fabrics as gabardine, which have a high thread-count per inch in the warp, and shows as intermittent streaks scattered over the entire width of the material. In yarn-dyed fabrics with twist warps, heddle bunching sometimes is the result of an insufficient number of turns per inch, but the most common causes are the excessive crowding of heddles, the use of poor entering drafts, or the use of unsuitable types of harness frames where the heddle-bar supports interfere with the free sidewise movement of the

heddles. Sometimes bunched heddles stick because of dirty or corroded slides.

In picking up a broken thread, weavers push away the heddles on each side of the break and frequently the heddles stick in this position. Whatever the cause of the sticking, the warp ends are forced out of line, there is excessive rubbing and stretching of the ends, and the damaged fibers show as streaks. Later, some sudden vibration may send a few of the heddles back into position, but others may stick intermittently and produce entirely irregular streaks of no definite width or length and at no definite point in the cloth (except where they are traceable to the heddle-bar supports).

The cure for streaks caused by bunched heddles is usually to re-enter the warp, design the draw on more harnesses, and so reduce and even the number of heddles per inch on the individual shafts. In the case of looms with a spring under-pull, it may be found that the addition of a harness center brace will aid the free movement of the heddles. It should be noted also that many makers of fine worsteds still insist on using the old type of special cotton heddles because bunching cannot possibly occur with this type.

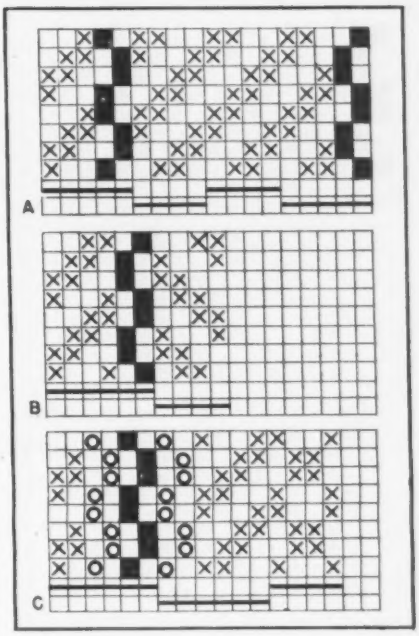
By and large, it is a good rule always to use more than the minimum number of harnesses required in cloths with high warp settings; the entering draw should be made with particular regard for even heddle distribution and straightness of draw, and there should be fewer heddles per inch on all harnesses.

ROLLING END. In the manufacture of yarn-dyed fancy worsteds which use a 2-up, 2-down hopsack split-basket ground weave with adjacent ends of different colors rising and falling together, irregular cracks or streaks of alternate dark and light may show in the finished fabric. This defect is produced by the end of one color temporarily crossing or "rolling" over the accompanying end of a different color. In using this weave, it is essential that all the adjacent ends of different colors which are working alike be separated by the reed dent and that careful attention be paid to warp tension and shedding timing. To keep adjacent ends separated in this way requires the use of a reed of double fineness in which the ends are reeded only two per dent. The difficulty in this practice is that there will often be excessive end breakages, since knots which pass freely when four or more ends per dent are used will not pass so easily through the finer reed. A very popular Glen-check design uses the hopsack matt ground weave, but it will give great trouble and numbers of seconds unless a fine or double reed is used and unless particular attention is paid to knots in the preparation of warp yarns.

CRACKED STRIPES. To many makers of plain fabrics, the addition of a decorative stripe, such as a mercerized-cotton lace line, appears simple and inexpensive, but—particularly in piece-dyed cloths—it is surprising how many seconds this simple addition can cause. The usual defect is a break or "crack" in the mercerized stripe, and often there will be a gap of as much as half an inch where no stripe appears.

This flaw is the result of warping the decorative threads onto the beam at the same tension as the ground worsted. The worsted stretches during weaving take-up and shedding, but the more brittle mercerized ends, in addition to breaking more and more frequently as more cloth is woven, will not stretch and therefore form tight ridges in the cloth. If a take-up roll covered with rough steel fillet is used, the stripe, already under tension, will often break while passing over the roll; if it does not break here, it will almost inevitably do so during the subsequent dyeing and finishing, because any tension applied to the cloth will obviously be taken first by the stripe and this is already at its tensile limit. Thus, the striping may be warped in with the ground yarn only if means are arranged for it to be given either no tension or greater length. At the same time, the ground yarns should be given high tension, which can best be done by using arrangements of tension washers or "wave" motions. The coarse metal fillet on the loom take-up roll may be covered with fine emery paper or some other substance which will serve the same purpose without plucking or breaking the striping.

LACE LINES. It should be noted here that the simplest form of lace line is based on any three ends of a 2-up, 2-down twill weave; the central end is omitted so that the other two work in opposition. In simple types, the stripings cut only with each other while twilling with the adjacent ground threads; smarter stripes are produced by varying the working so that the stripes work opposite to the ground threads as well as to each other. Illustrated is a variant of one of the smartest lace lines used in fancy



Simplest lace line is based on three ends of 2-up, 2-down twill, by omitting the center end so that the two remaining ends work in opposition. A shows this type of lace line introduced on a twill ground, B shows it on a herringbone ground. An elaborate lace line with background lacing is shown at C.

worsteds. It is produced by adding two ends of black or colored mercerized yarn on either side of the central lines of white or light gray, so that the fine stripe is thrown into bold relief on a dark background. In this type of stripe, there will often be at least eight ends crammed together as closely as possible, with each end working as the exact reverse of the next. The difficulties of trying to

(Continued on page 218)

Broken warp stripes occur when decorative ends are beamed with same tension as ground ends. The more elastic worsted yarn stretches in weaving, leaving the mercerized yarns taut and ready to break during subsequent operations.

Handling Systems Speed TRICOT-MILL Production

HIGHLIGHTS: *Beam assembly and mounting system uses specialized equipment—Apron permits quick removal of knit cloth—New Ko-Nit building designed especially for tricot knitting.*

AN EFFICIENT SYSTEM of assembling tricot sectional beams and creeling them into the warp-knitting machines is but one of several features of the new Ko-Nit Textile Corp. plant at Englewood, N. J., operated by Erich Kolbe.

The assembly system used is shown and described in the accompanying illustrations, Figs. 1 to 4. The system and equipment were developed by Robert Reiner, Inc. In fact, the Ko-Nit plant is completely Reiner equipped: cone warper, assembly equipment, and high-speed tricot machines.

The building housing the equipment is new and was designed especially for tricot knitting. In the background of Fig. 5 will be seen what appears to be a room. Actually, it is a receiving and shipping area sealed off from the rest of the building so that opening of outside doors will not affect the air conditions of the plant. To the rear of the plant is a railroad siding; but, so far, trucks are used for transportation. A special driveway and platform were built to accommodate them.

For humidification Ko-Nit uses Air-Perme-Ator units, one of which can be seen in the upper left background in Fig. 5. Above it and to the right is one of the plant's Janitrol gas-heating units.

The building is virtually fireproof. Note from the photos that roof beams are steel, as is the roof; walls are concrete block and brick with large glazed areas (steel sash), and the floor is concrete. All power lines are imbedded in the floor.

The building has plenty of room for future expansion. It has 15,000 sq. ft. of floor area with 75 ft. clear spans. The front of the building uses glass block to achieve a pleasing appearance. Lighting, of course, is fluorescent. Rest rooms are tiled.

ONE-BAR WORK. The new Reiner tricot machines were started up with one-bar work although they are the 2-bar, 168-in., 28-gage machines. They are equipped with Veeder-Root preset rack counters which automatically stop off each machine for doffing after it has run 250 racks of 480 courses.

In Fig. 6 can be seen a method worked out by a Ko-Nit employee, Tom Heffron, for removing the pieces of knit cloth from the machines. The combination of quick changing of beams and speedy removal of cloth has permitted high production efficiency.

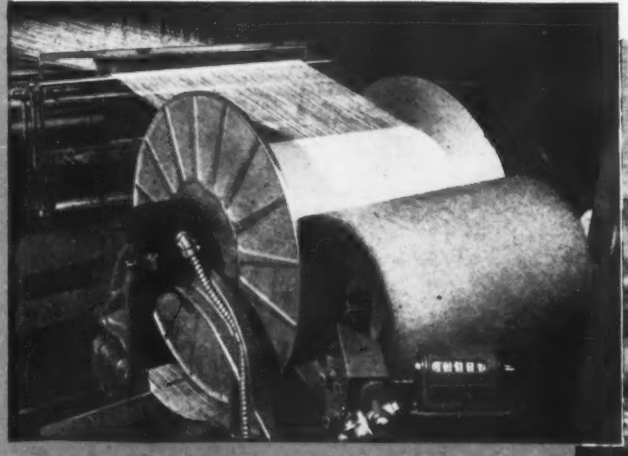


Fig. 1. Beams are run on a 600-end Reiner warper to a predetermined yardage at a speed of 450 to 600 yd. per min., depending on the yarn. The 21-in. by 21-in. beams will hold over 20,000 yd. of 75-den. yarn.

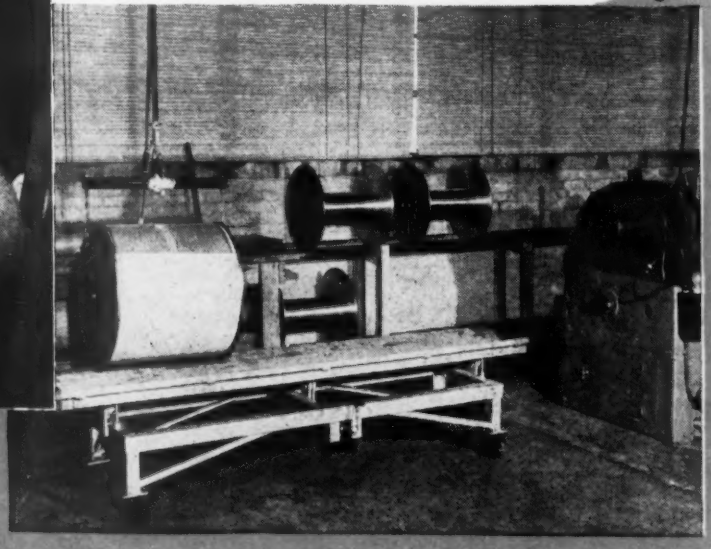
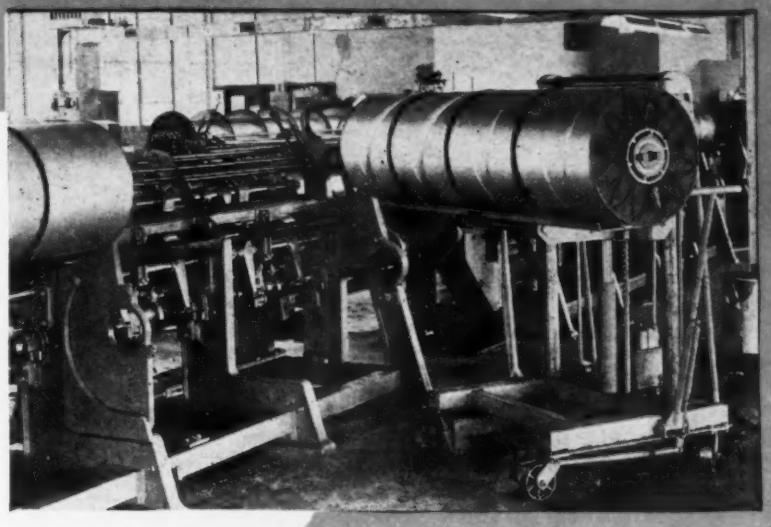


Fig. 2. From the warper head, beams are lifted by means of an electric hoist, mounted on a track, to a loading wagon shown here. The wagon will hold four beams, enough for half a line of sectional beams. When four have been accumulated, a beam shaft is inserted; and they are ready for transfer to the hydraulic beam lift truck (Figs. 3 and 4). Empty beams are collected on a rack against the wall.

Fig. 3. From the wagon, shown in Fig. 2, beams are rolled onto this hydraulic beam lift truck which is used to lift a half-line of beams into place on the tricot machines.



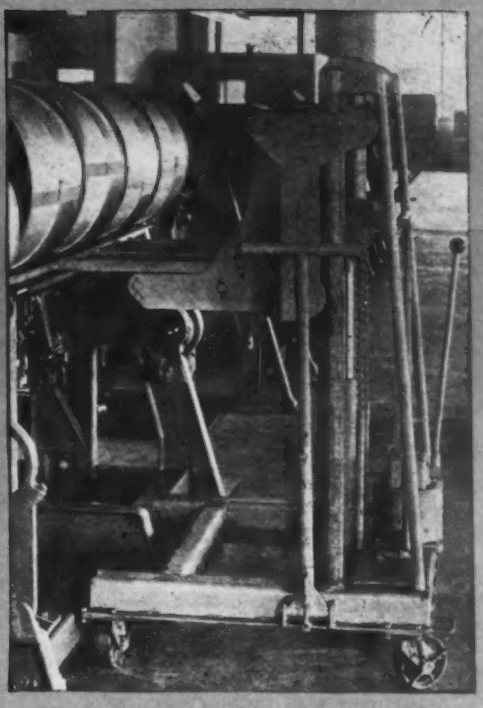


Fig. 4. The truck is lowering the beams into place. The hole seen in the center frame of the tricot machine is for mounting a second line of beams which also can be accomplished with the truck. The truck has movement in all three planes, it rolls easily on casters and requires only 60-in. alley space.

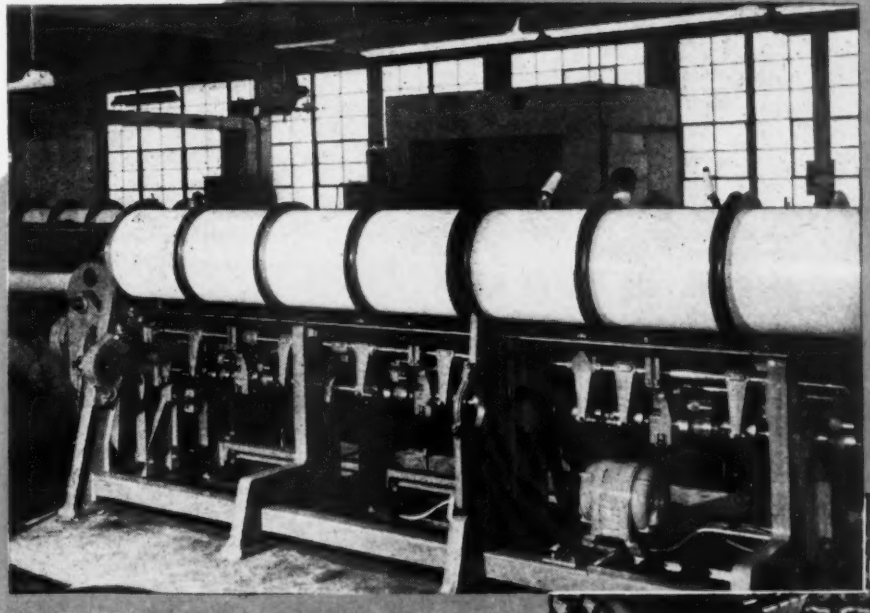


Fig. 5. This view shows many of the details of the plant: The loading and unloading room in the background, a Janitrol gas unit heater to the left of it, an Air-Perme-Ator humidifier further to the left, the ceiling construction, and the facilities for natural as well as artificial light. It also shows the center-mounting of the drive for the Reiner machines and the cam shafting.

Fig. 6. For rapid removal of cloth, a piece of canvas is hung between two machines and two operators quickly unroll a piece of fabric into it. The canvas protects the cloth as it is taken to scales to be weighed as a part of Ku-Nit's quality control. The mill's warper creel can be seen, indistinctly, in the background.

PIPE-LINE STRAINERS
Can Reduce Maintenance Costs

HIGHLIGHTS: *Pipe-line strainers could save 25% of factory service charges—Leaking valves are a constant source of expense—Strainers increase efficiency of meters, valves, pumps, etc.*

By R. E. COCHRAN
McGraw-Hill Cleveland Bureau

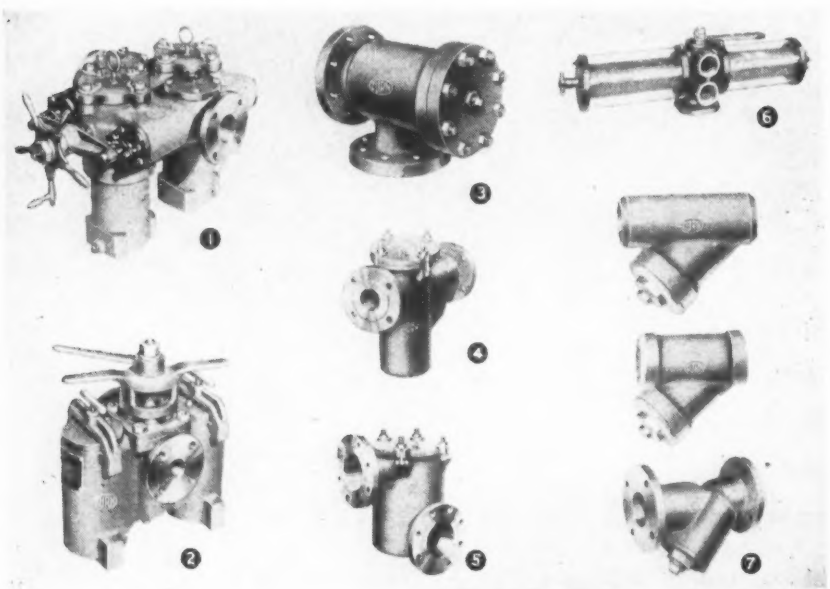
THE COST OF SEDIMENT DAMAGE to close-tolerance pipe-line equipment —such as pumps, valves, meters, and steam traps used in textile plants— is so great that nearly every mill can save a considerable amount of money by checking its pipe systems and installing efficient strainers.

In the past, sediment and foreign matter in pipe lines have been accepted largely as a matter of course, if they received any consideration at all; but recent studies of pipe-line failures have proved that the cost of sediment damage runs into many thousands of dollars annually. In the conditioning and cleaning of water, steam, oil, air, and condensate, strainers can eliminate much of this cost by intercepting sediment. A large manufacturer of pumping equipment reported that 25% of all its service cost could have been prevented if strainers were used on pipe lines.

Strainers in textile mills perform two functions: (1) they protect equipment from fouling and damage by sediment; and (2) in some instances, they prevent sediment from entering and contaminating the final product, such as the sizing solution or dye bath.

The first is the most common function. Pumps, for instance—whether vacuum, centrifugal, rotary, turbine, ejector, or aspirator—are readily damaged by the abrasive action of sand and other sediment that wears out impeller blades, rotors, vanes, and other close-tolerance parts. Many maintenance men overlook this fact. When a pump failure occurs, they replace the damaged part without correcting the source of the trouble or having it corrected by the service department of the pump manufacturer.

WATER LINES. On water lines, it is also economical to install strainers. That a plant uses a filtered supply of water, as from a municipal plant, does not necessarily imply that lines will remain clean. Scale continually forms and flakes off in the pipes and other



All pictures through courtesy of J. A. Zurn Mfg. Co.

Fig. 1. Seven principal types of strainers for protecting costly pipe-line equipment: (1) a duplex strainer for the continuous operation of a pipe line; (2) a duplex strainer with a non-freezing plug; (3) angle-type strainer for high-pressure lines of vapor, steam, or gas; (4) a straight-through strainer for high or low pressures; (5) an offset strainer for right-angle body connections for high or low pressures; (6) a duplex strainer with a Lucite tube for visual inspection; and (7) Y strainers for small lines.

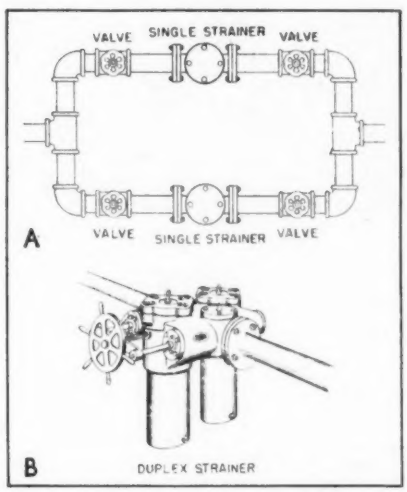


Fig. 2, A. A common method of installing strainers on important pipe lines where continuous operation is necessary. The pipe line is split with a T, and each section is routed through a separate single strainer. While flow is maintained in one section, the other section may be shut down.
B. This installation eliminates excess piping, four valves, and one strainer. Continuous operation is maintained by a single duplex strainer with an integral two-valve unit.

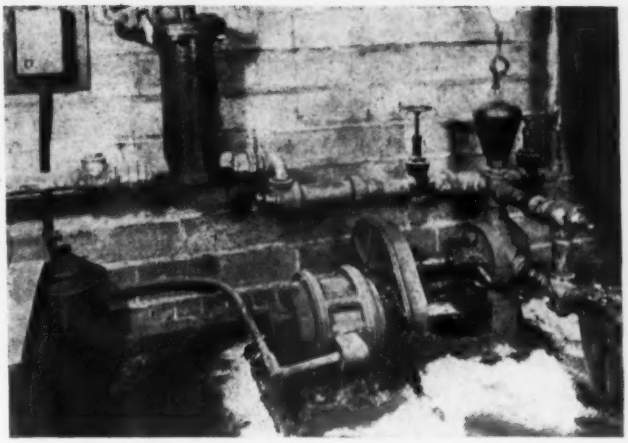


Fig. 3. This 2-in. rotary pump, damaged by foreign matter, was out of operation two weeks while it was being repaired at a cost of $70. Foreign matter caused the gear to be sheared off the drive into the pump. After this experience, a strainer was installed.

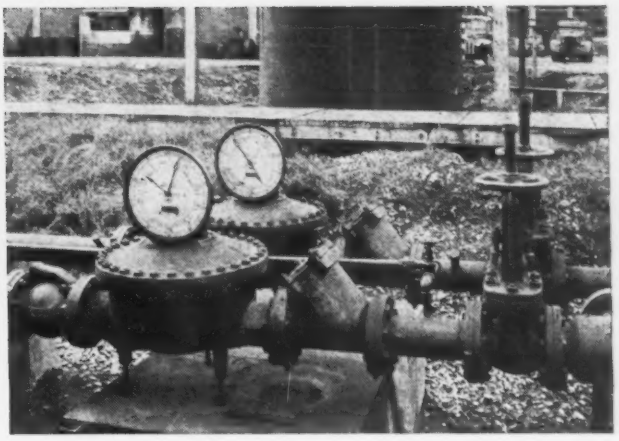


Fig. 4. These meters, though on the same installation, are not registering together because they have been damaged by a rust accumulation that passed through the lines from a storage tank. Adequate strainers would have prevented this damage.

equipment and should be removed by strainers at some point along the line.

On any new installations of water lines, strainers should be installed.

Sections of pipe are exposed to the air and weather after their fabrication and before installation in any plant. During exposure, sand, dirt, and other sediment accumulates inside the sections of piping. When a pipe system is first placed in operation, this accumulation can easily damage close-tolerance equipment. Instances have been reported where stones, rats, mice, nuts, bolts, and even fish were found in what was believed to be a clean section of piping.

Scale builds up in municipal pipe lines and attempts are made to knock it down with various chemicals. Water, furthermore, is often clarified with lime; and there frequently is a tendency to overfeed the water with lime. Many water-supply plants then use carbon dioxide to precipitate the lime as rock. This rock substance often builds up in lines and must be knocked down with a metal phosphate. The resulting sediment damages costly equipment and has shut down textile production.

It is unnecessary to say that mills that use their own water supply should strain it. Whether or not water is filtered, a strainer should be installed on the intake line into the plant. A duplex strainer, Fig. 1, item 1, will give the added asssurance of continuous operation, and the flow may be altered from one chamber to another within the same mechanism.

PUMPS. Pumps represent an important type of finishing-plant equipment requiring protection. It is an economic waste to fail to protect such costly equipment with low-priced strainers.

Another important strainer application is on meters that gage fluids, as in various finishing processes. These meters usually have very small orifices that easily become clogged. A meter damaged by sediment may read too fast or too slow. In either event, there may be danger of overrating or underrating the actual flow.

Loss due to leaky valves can run into real money. The actual cost of damage to the valve itself is the minor cost. The big, first cost is the direct loss of solutions, air, steam, water, or oil. The following figures are estimates based on the report of an engineering department of an industrial plant: If a valve has an opening $\frac{3}{8}$ in. in diameter and is on an air line of 100-lb. pressure, it will waste 9,979,200 cu. ft. of air per month, which will cost roughly $1,197.50. The same-size hole on a valve on a steam line of 250-lb. pressure will waste 1,062,000 lb. of steam per month, costing $849.60. A valve with an opening $\frac{3}{8}$ in. on a water line of 40-lb. pressure will waste 692,400 gal. of water per month, at a cost of $124.63. Other expenses might enter into the cost picture because of a loss of time resulting from costly delays and shutdowns.

Pipe scale develops in steam systems as the pipes age. Regardless of the type and size of the steam trap, dirt will be carried eventually to the valve orifice. It may pass through, but steam trap orifices are so small that the dirt will ordinarily jam on the seat; and the valve will remain open and the trap will blow steam. In a closed system, it is sometimes difficult to locate the steam leak; and when it is finally located, the seat will probably be cut

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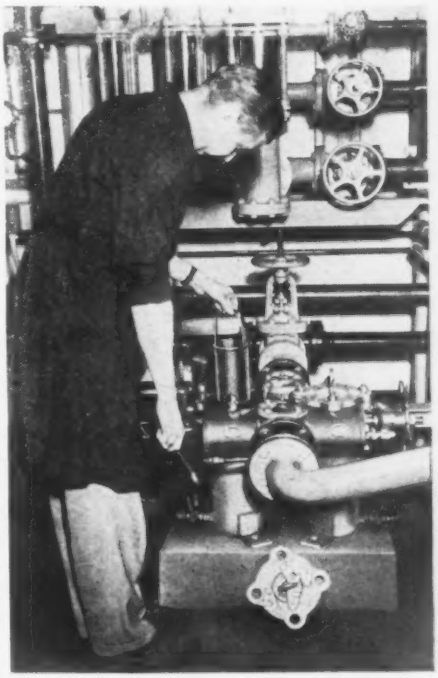


Fig. 5. A duplex strainer being inspected. A strainer of this type permits continuous operation by diverting the flow to one of the two valves while the strainer in the other chamber is inspected or cleaned.

Perforation Specifications

Service	Diameter of holes	Number holes per sq. in.
Raw water	0.375 (in.)	8
Filtered water	0.125	33
Heavy oil	0.125	33
Light oil	0.0625	98
Steam, gasoline, air	0.045	169

Fig. 6. Recommended perforations for strainer baskets for use in several applications.

Mill Technicians Can Use FIBER-TEST DATA

Table 1. Details of Short-Staple Cottons Tested

Item	Minimum	Maximum	Mean
Grade of cotton (by number)	4.33	10.00	6.27
Staple length (in.)	5/8	1 5/16	31/32
Upper-quartile length (in.)	0.73	1.45	1.084
Mean length (in.)	0.59	1.23	0.906
Coefficient of length variability (%)	22.0	40.0	28.4
Fiber fineness (micrograms per in.)	2.8	6.9	4.72
Percentage of mature fibers	48.0	86.0	72.1
Fiber strength (1,000 lb. per sq. in.)	61.0	103.0	79.6

Table 2. Spinning Qualities of Short-Staple Cottons Tested

Item	Minimum	Maximum	Mean
Strength, 22s carded yarn (lb.)	49.0	142.0	95.84
Strength, 60s carded yarn (lb.)	4.1	43.0	22.89
Strength, 23/5/3 tire cord (lb.)	10.8	21.4	17.9
Elongation at 10 lb., 23/5/3 tire cord (%)	7.73	14.58	11.34
Elongation at rupture, 23/5/3 tire cord (%)	11.90	20.40	16.01
Appearance, 22s carded yarn (grade)	A	D−	B
Picker waste (%)	1.64	15.48	5.12
Card waste (%)	3.41	11.52	5.41
Picker and card waste (%)	5.94	19.75	10.24

Table 3. Importance of Fiber Properties to Strength of Carded Yarn

Item	Strength of yarn		
	22s	60s (1)	60s (2)
Coefficient of correlation (R)	0.933	0.936	0.943
Variance accounted for ($R^2 \times 100$)	87.1%	87.5%	88.9%
Precision of estimate	±5.42 lb.	±2.12 lb.	±1.95 lb.
Fiber strength	(1) +0.750	(1) +0.648	(1) +0.716
Coefficient of length variability	(2) −0.658	(2) −0.622	(2) −0.652
Upper-quartile length	(3) +0.395	(3) +0.519	(4) +0.441
Fiber fineness	(4) −0.377	(4) −0.414	(5) −0.393
Grade of cotton	(5) −0.291	(5) −0.307	(6) −0.071
Fiber maturity	(6) −0.209	(6) −0.289	(3) −0.481

Table 3. The coefficient of correlation, first line, (stated as a fractional part of 1.0) is a number used to indicate the importance of the six collective fiber properties to carded-yarn strength. If the coefficient were 1.0, the relation between the fiber properties and yarn strength would be perfectly balanced; and the strength of the yarn would be totally dependent upon, and accurately predictable by, the six fiber properties.

The second line shows the percent of variance in carded-yarn strength that is accounted for by the six fiber properties. The other 12.9% variance in 22s yarn is probably due to errors in sampling and testing, varying spinning technique, and possibly other fiber properties.

The third line shows the accuracy with which strength of carded yarn can be estimated from the fiber properties. [See TEXTILE WORLD, Dec., 1945, page 166, for the formula for estimating yarn strength.]

In the lower part of the table, the fiber properties are ranked by the numbers in parentheses according to their importance to yarn strength. The coefficients listed under the respective yarn numbers indicate the comparative degrees of this importance. The plus or minus sign preceding a coefficient shows whether the contribution of that particular property to yarn strength is positive or negative. Thus, if fiber strength increases, yarn strength will also increase; if fiber strength decreases, yarn strength will decrease. However, if variability of length increases, yarn strength will decrease; if variability of length decreases, yarn strength will increase.

Tables 4, 5, 6, 9, 10, and 11 follow the pattern of this table.

HIGHLIGHTS: *Six fiber properties accounted for 97% of the strength of yarns spun from 25 different cottons—Most of the variance in yarn strength that is unpredictable by fiber properties is probably due to errors in testing—Prediction is equally accurate for carded and combed yarns.*

By P. M. THOMAS
Associate Editor, TEXTILE WORLD

FIBER TESTING is generally directed toward determining six fiber properties: strength, coefficient of length variability, upper-quartile length, fineness, maturity, and grade. The values of these properties can be determined with acceptable accuracy; but because of their complex relationship, it is difficult for a mill technician to tie them dependably to manufacturing qualities. The tables of U. S. Dept. of Agriculture test results presented here should go far in aiding technicians to accomplish this purpose.

It is well known that the length of cotton directly affects the quality of yarn. It is well known also that fineness and strength of fibers almost invariably accompany length. Since two given cottons of identical classer's length are apt to possess different properties of fiber fineness and strength (and probably even length distribution), the real problem is to coordinate these variable values so that their behavior in manufacturing can be predicted with reasonable accuracy.

This problem is further aggravated by the necessity for considering also maturity, grade, and length variability. Thus, in any cotton sample, the technician will be faced with six variables. The accepted mill method of reducing all values to an average for operating convenience cannot be applied to these six fiber values, for such averages would mean nothing and would in no way provide an index of manufacturing qualities. It is necessary, there-

Mills Can Use USDA Data

The testing of cotton fibers to determine the values of the various measurable properties is relatively new to the textile industry. Through the efforts of the U. S. Dept. of Agriculture and the Cotton-Textile Institute, Inc., the techniques of testing fiber properties have been more or less perfected, and the training of mill technicians in making these tests has proceeded at a fairly rapid rate.

However, there has been little evidence of accumulated fiber data being put to important practical use by mills that have adopted the fiber-testing program. The reason for this tardiness no doubt has been that too little was known about the practical value of the data obtained from the tests. Mill technicians could determine the fiber properties; but after the determinations were made, it was not clear as to just what value they held.

The idea entertained by most fiber technicians was to collect a mass of test results and, sooner or later, attempt to determine how the testing program could be usefully applied to the mill's buying of cotton and manufacture of yarn. Thus, the technicians, untrained in statistical research, were faced with the prospect of being forced to utilize the methods of statistical research.

Fortunately, this function of the mill technician is no longer necessary. In a series of studies recently completed by the U. S. Dept. of Agriculture, the complex—and apparently haphazard—fiber-property picture has been reduced to a state of simplicity that is not only understandable but that also promises to give fiber-testing programs much needed direction.

The accompanying article, though not an abstract of, is based upon a paper presented by Robert W. Webb, cotton technologist, U. S. Dept. of Agriculture, at a recent meeting of the Fiber Society at New Orleans, La. Copies of the paper, "Relation and Relative Importance of Some Cotton Fiber Properties to Certain Manufacturing Qualities," are available at the U. S. Dept. of Agriculture, Washington 25, D. C.

fore, to know the importance of each property to manufacturing performance.

UNEXPLAINED VARIABLE.—However, when all possible data on the six properties are assembled, the spinning performance of cotton is not entirely accounted for. There is a variable that remains unexplained by the six properties. In Table 3, the second line, "Variance accounted for," gives the variance in the strength of carded yarn that is accounted for by the six fiber properties. For 22s yarn, this value is 87.1%, which leaves 12.9% of the variance in the strength of the yarn unaccounted for.

This 12.9% variance is probably attributable to (1) other fiber properties, (2) variations in spinning, and (3) variations in sampling and testing.

The value of the variance is, of course, never constant. The 12.9% value was obtained from studies of a very large number of different cottons. In a study of 25 cottons, selected so that the strength of 22s yarn increased 4 lb. for each consecutive cotton, the variance was only 6%. With 25 cottons selected so that the strength of 60s yarn increased 1 lb. for each cotton, the variance was only 3%.

Thus, in these two latter studies, the six fiber properties accounted for 94% and 97% of the strength of the yarns. Variety of the cottons showed no appreciable influence.

These results are of great importance to the mill technician. Ordinarily, a mill runs only a few different cottons in its mixes, and the characteristics of these cottons usually cover only a narrow range. It should be relatively easy for the technician to explain

Table 4. Importance of Fiber Properties to Strength of Tire Cord

Item	Strength of 23/5/3 tire cord	Elongation of 23/5/3 tire cord at	
		10-lb. load	Point of rupture
Coefficient of correlation (R)	0.920	0.679	0.665
Variance accounted for ($R^2 \times 100$)	84.6%	46.1%	44.2%
Precision of estimate	±0.78%	±0.95%	±1.26%
Fiber strength	(1) +0.834	(1) −0.632	(1) −0.499
Coefficient of length variability	(2) −0.583	(5) +0.029	(3) −0.201
Grade of cotton	(3) −0.314	(4) −0.040	(4) −0.171
Fiber fineness	(4) −0.283	(2) −0.324	(2) −0.398
Fiber maturity	(5) −0.062	(3) +0.112	(5) +0.042
Upper-quartile length	(6) −0.021	(6) +0.016	(6) +0.027

Table 5. Importance of Fiber Properties to Appearance of Carded Yarn

Item	Appearance of yarn	
	22s	60s
Coefficient of correlation (R)	0.820	0.797
Variance accounted for ($R^2 \times 100$)	67.3%	63.5%
Precision of estimate	±1/3 grade	±1/4 grade
Coefficient of length variability	(1) +0.551	(1) +0.636
Grade of cotton	(2) +0.446	(6) −0.017
Upper-quartile length	(3) +0.372	(2) +0.368
Fiber fineness	(4) +0.095	(3) +0.109
Fiber maturity	(5) +0.030	(4) +0.063
Fiber strength	(6) +0.015	(5) +0.021

Table 6. Importance of Fiber Properties to Percentages of Waste of Carded Yarn

Item	Percent manufacturing waste at		
	Picker	Card	Picker and Card
Coefficient of correlation (R)	0.677	0.884	0.816
Variance accounted for ($R^2 \times 100$)	45.9%	78.2%	66.5%
Precision of estimate	±1.69%	±0.65%	±1.62%
Grade of cotton	(1) +0.606	(1) +0.713	(1) +0.749
Coefficient of length variability	(2) −0.329	(2) +0.595	(5) −0.064
Fiber maturity	(3) −0.274	(6) +0.002	(2) −0.268
Fiber strength	(4) +0.217	(5) −0.121	(3) +0.169
Upper-quartile length	(5) −0.102	(4) +0.168	(6) −0.034
Fiber fineness	(6) +0.030	(3) +0.322	(4) +0.156

Table 7. Details of Long-Staple Cottons Tested

Item	Minimum	Maximum	Mean
Grade of cotton (by number)	3.00	9.00	4.53
Staple length (in.)	1 1/16	1 7/8	1 7/16
Upper-quartile length (in.)	1.17	1.94	1.55
Mean length (in.)	0.92	1.53	1.23
Coefficient of length variability (%)	21.0	45.0	34.6
Fiber fineness (micrograms per in.)	1.8	4.3	3.0
Percentage of mature fibers	57.0	89.0	72.6
Fiber strength (1,000 lb. per sq. in.)	70.0	114.0	93.2

Table 8. Spinning Qualities of Long-Staple Cottons Tested

Item	Minimum	Maximum	Mean
Strength, 60s combed yarn (lb.)	31.0	61.0	48.0
Strength, 100s combed yarn (lb.)	14.0	32.0	23.7
Appearance, 60s combed yarn (grade)	A	D−	B−
Appearance, 100s combed yarn (grade)	B+	D−	C
Picker waste (%)	1.20	6.90	3.27
Card waste (%)	7.70	17.10	10.66
Picker and card waste (%)	9.30	22.80	13.57

Table 9. Importance of Fiber Properties to Strength of Combed Yarn

Item	Strength of yarn	
	60s	100s
Coefficient of correlation (R)	0.927	0.933
Variance accounted for ($R^2 \times 100$)	86%	87%
Precision of estimate	±2.61 lb.	±1.46 lb.
Fiber strength	(1) +0.758	(1) +0.711
Fiber fineness	(2) −0.584	(2) −0.658
Coefficient of length variability	(3) −0.426	(3) −0.434
Fiber maturity	(4) +0.333	(4) +0.363
Grade of cotton	(5) −0.288	(5) −0.244
Upper-quartile length	(6) −0.239	(6) −0.148

Table 10. Importance of Fiber Properties to Appearance of Combed Yarn

Item	Appearance of yarn	
	60s	100s
Coefficient of correlation (R)	0.862	0.844
Variance accounted for ($R^2 \times 100$)	74%	71%
Precision of estimate	±1/3 grade	±1/3 grade
Coefficient of length variability	(1) +0.451	(3) +0.336
Fiber fineness	(2) −0.422	(4) −0.313
Upper-quartile length	(3) +0.418	(1) +0.444
Grade of cotton	(4) +0.285	(2) +0.391
Fiber strength	(5) −0.198	(6) −0.155
Fiber maturity	(6) −0.115	(5) −0.233

Table 11. Importance of Fiber Properties to Percentages of Waste of Combed Yarn

Item	Percent manufacturing waste at		
	Picker	Card	Picker and Card
Coefficient of correlation (R)	0.413	0.806	0.727
Variance accounted for ($R^2 \times 100$)	17%	65%	53%
Precision of estimate	±0.99%	±0.96%	±1.47%
Grade of cotton	(1) +0.234	(1) +0.568	(1) +0.500
Coefficient of length variability	(2) +0.214	(4) +0.104	(4) +0.193
Fiber fineness	(3) −0.160	(3) −0.248	(3) −0.252
Fiber maturity	(4) +0.113	(6) +0.002	(5) +0.070
Upper-quartile length	(5) −0.057	(2) +0.432	(2) +0.261
Fiber strength	(6) −0.056	(5) +0.031	(6) −0.016

most of the variance in yarn strength by the six fiber properties.

Since the unexplained variance was reduced to 6% and 3% in the two 25-cotton tests, it is indicated that the technician need not concern himself with other possible fiber properties. Instead, he should try first of all to eliminate variance caused by his own sampling and testing. If the unexplained variance cannot be satisfactorily controlled in this manner, a survey of spinning practices should be made. If a pilot plant is not available, it may be necessary to work out a constant for the value of the variance usually caused by uncontrollable factors in spinning.

Pipe-Line Strainers

(*Continued from page 119*)

so badly that it must be replaced. It requires a hole only 3/32 in. in diameter, at a steam pressure of 100 lb. per sq. in., to leak steam equivalent to 2½ tons of coal a year.

CARE OF STRAINERS. There has been a tendency on the part of some operating engineers to neglect strainers once they are installed, particularly in small textile plants where the number of strainers is limited. Strainers intercept sediment, but they will not discharge it; it is necessary that they be inspected periodically. When they become full, they will seriously retard the rate of flow and may be damaged. The periods of inspection vary, depending upon the amount of sediment in the line; a daily inspection may be necessary, or a yearly examination may be sufficient.

Strainers of the same size as the pipe line should be used, except in cases where the head loss is too great and a strainer larger than the line is needed. However, strainers larger than the line are generally necessary only when poorly designed strainers are used. The strainer baskets, as a rule, wear out before the strainer bodies; but baskets can be replaced economically.

Head loss through the strainer can be minimized by selecting baskets with the proper-size perforations for the type of liquid to be strained (see Fig. 6). However, all types of raw water, for instance, may not require the same perforation specifications. River water is usually more contaminated than lake water, and a finer perforation may be required to intercept the silt and fine particles. Finishing-plant and slasher solutions are variable liquids that may be dirtier in some instances than in others.

TERYLENE

Going Into Commercial Production

HIGHLIGHTS: *Melt spinning and stretching used to produce yarn with variety of property combinations—Weaving presents less of problem than dyeing—Staple, which can be produced, claimed to give loft to fabrics.*

By F. R. BREWSTER
McGraw-Hill World News, London

STEADY PROGRESS is being made in England toward the full-scale production of fibers and fabrics made of Terylene—a fiber-forming polyester made by the condensation of ethylene glycol with terephthalic acid—according to W. F. Osborne, Plastics Division, Imperial Chemical Industries, Ltd., which is undertaking the active development work.

Full-scale equipment for the melt-spinning of the polymer into fiber is already in operation in the Fibers Development Department of the I.C.I. Plastics Division at Welwyn. In this process, invented by Du Pont for the spinning of nylon after unsuccessful attempts to spin that material by methods then used for producing rayon fiber, no solvent is used. The polymer is supplied to the spinning head in chip form. There it is heated to a temperature above 246° C. (Terylene's melting-point) until the molten polymer is sufficiently fluid to be pumped at a carefully controlled and constant rate through a filter and a thick spinneret plate. The latter is perforated with the correct number of holes to give the desired filament count in the finished yarn.

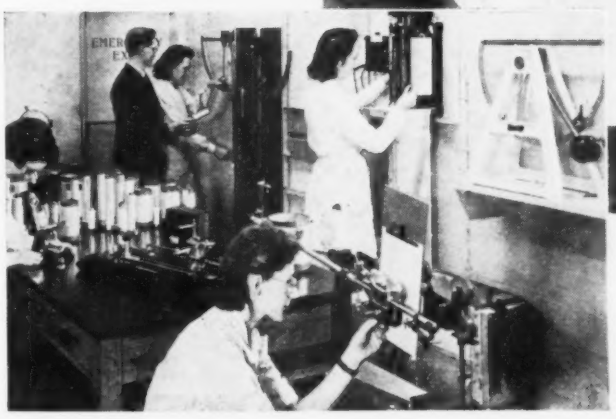
The filaments thus formed are wound on a suitable bobbin. And, as the rate of winding is normally much higher than the rate of extrusion, the filaments are thus drawn to a diameter less than the hole-size of the spinneret. This permits the holes in the spinneret to be larger than those in spinnerets used in wet or dry spinning.

Filaments of widely different denier are thus obtainable, varying over a considerable range from very high tenacity and low extensibility to relatively

(Continued on page 174)

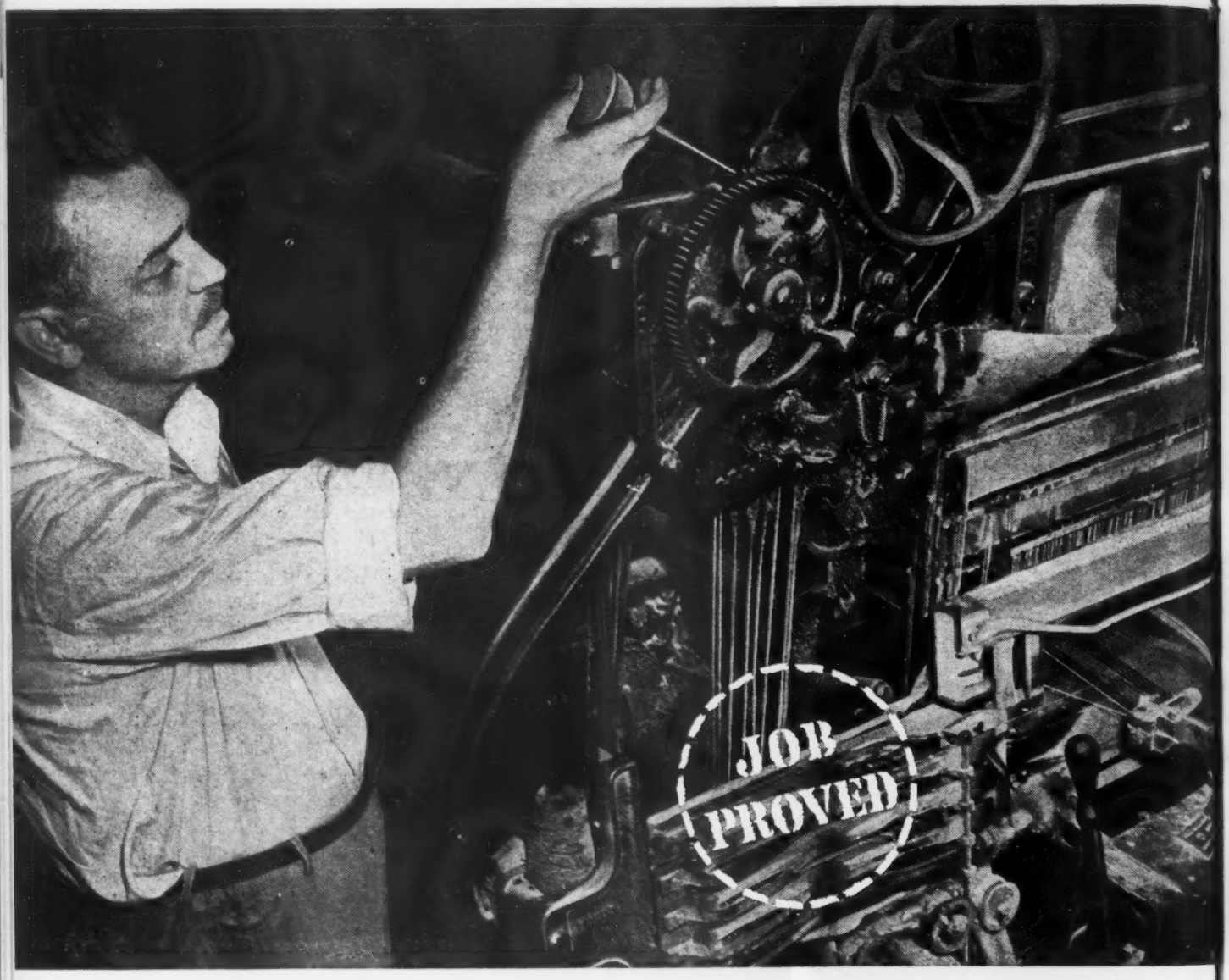
Terylene filaments are formed by melt spinning. Stretching occurs during spinning as well as in subsequent operation.

Terylene fabrics woven experimentally indicate the new yarn is easy to manufacture into cloth; dyeing presents problems.



Tests of Terylene here being made show it to be quite strong and to have good elasticity.

Makes Dyeing Easy!



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A well-known woolen mill was plagued by oil spots on high-grade woolens. The oil was applied to open gears, chain-drives and other parts of machines, but a considerable quantity dripped off and spotted the cloth.

These spots could not be removed by ordinary automatic washing, or even by hand spotting. As a result, dye would not "take" on the areas that had been soiled.

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Test of WARP SIZE Is in the Weaving

HIGHLIGHTS: *Too much size penetration into yarn gives stiff, rod-like, poor-weaving characteristics to warp —Pearl corn-starch with chlorides added renders warp size more flexible—Sward test measures the hardness of size film, determines weavability.*

By DR. PAUL V. SEYDEL*
Seydel-Woolley & Co., Atlanta, Ga.

THE PURPOSE OF WARP SIZING is not to produce a certain feel, or a certain stiffness in the yarn. It is not to give added weight or strength to the yarn, nor even to lay the fibers. It is purely and simply to obtain the best possible weaving of the yarn. These other considerations contribute to good weaving, but will not produce it.

What, then, should a well-sized yarn be like, and why cannot one or two properties be chosen as a basis for judging a sized yarn? Attempts have been made by practically everyone who has investigated the subject to relate yarn or size-film tests to weaving efficiency. Certain work of the Textile Research Institute promises to give some indications of how the warp will behave in a weave room by correlating a number of different properties of the yarn and size films which may be tested in the laboratory. Yet even this

(Continued on page 196)

* Condensed from an address before the South Carolina Div. of Southern Textile Association, Greenville, S. C.

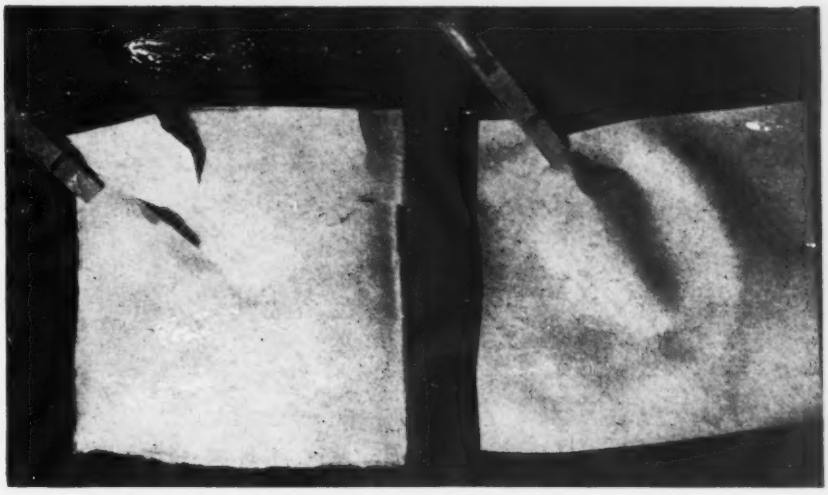

Fig. 1. The above samples of warp size were air-dried without heat in order to show the original properties of the films. At the left is pearl corn starch, which was smooth, fairly strong, but inflexible. When the clip was inserted under the film and brought upward, the film broke.

The second film (on the right) contains corn starch treated with certain chlorides to give it greater flexibility. The clip was inserted, and the film folded without damage, showing its greater flexibility.

Fig. 2. A warp-size film produced by adding more tallow to the corn-starch film than should be used for good sizing. Note the crusty, discontinuous effect. The same result may be obtained on sized warp yarn if too much tallow is used in the sizing mix.

Fig. 3. Sizing compounds contain water because the gums in the compound must be maintained in a more or less soluble state. Starch gums can be prepared to give a certain viscosity at any concentration desired, while many of the natural gums cannot be put into as concentrated solutions as desired for sizing purposes. Once dried out, the gums are very difficult to get back into solution. And some gums require water for the chemical reaction. The above 4% solutions of various gums demonstrate their respective viscosity.

The first is a natural gum, locust-bean gum (left). In a 4% concentration it is so stiff that it will not flow from the beaker. It has little adhesive quality and is used principally as a thickener.

The second gum (center) is produced from starch chemically treated. It pours more readily than the first, has medium viscosity, great adhesiveness.

The third gum (right) is also produced from starch and flows more readily than the first two. It combines fair adhesiveness with low viscosity.

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Europe Has Been Fertile Field For TEXTILE MACHINERY IDEAS

HIGHLIGHTS: *Switzerland leads in machine improvement — Rieter card combines workers and strippers with flats—Italy provides one warper head to serve several creels — Europe prefers hot-air drying for slashing—New looms being used contain numerous refinements.*

By RENE BOUVET*
Textile Research Dept., American Viscose Corp.

SWITZERLAND, known for a good many years as an outstanding textile center, has introduced a gamut of new and promising ideas.

In the textile machine line, for instance, Rieter of Winterthur a few years ago built a 40-in. card combining workers and strippers with flats. Two sets of workers and strippers are located on an oversize lickerin. The metal-wire clothed lickerin, or perhaps breast as one might be tempted to call it, is connected with the main cylinder by a divider. One more set of workers and strippers is found on the main cylinder followed by a fancy and a short chain of flats. The rest of the card is standard. This arrangement was predicated on the hope that in pre-working 2½ or 3 in. staples before they reach the flats, a higher degree of parallelism might be had, resulting in higher efficiency and greater perfection than attainable with a conventional flat-top card. The results obtained up to this time are not considered fully satisfactory, for too much of a breakdown takes place in carding; however, this condition is receiving further attention and may soon be under control. The production of the card is said to be attractive in comparison to that of conventional flat top.

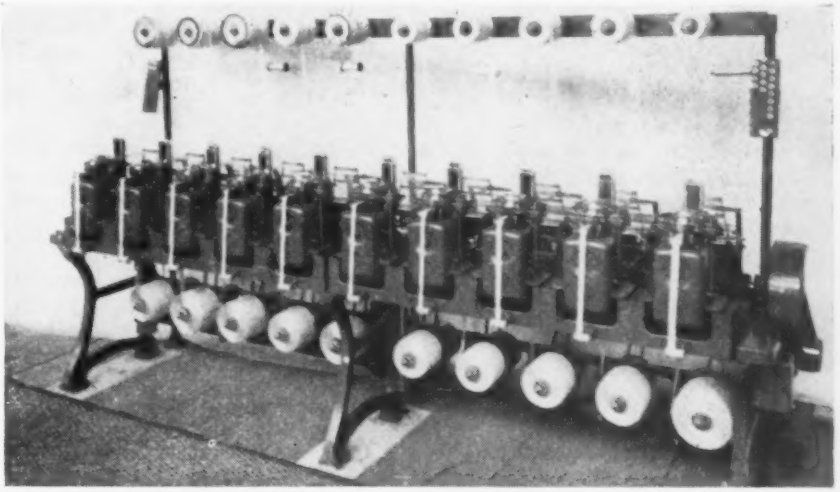
Rieter's latest type of cotton draw frames also hold some interest. These frames are equipped with six lines—four metal rolls and two leather-covered rolls, the last two located in the front. These frames are said to be markedly superior to the conventional four-line type inasmuch as they assure better staple control and are capable of processing eight ends most readily. Many European plants run eight ends on four-line cotton-type draw frames. Greater uniformity of the resultant sliver is said to be the main advantage. On the other hand, the opinion prevails that to run eight ends efficiently, the lines should be mounted with roller bearings.

FOR SPUN RAYON. There is a wide variety of cotton-type spinning frames being used in Europe for rayon processing. Le Blanc Roth, of French origin, and Rieter, a Swiss product, appear to be the most popular. Report No. 14, compiled by the American textile team, discusses the scientific approach to spinning followed at Denkendorf by the Zellewolle-Lehrspinnerei and presents many interesting features found on spinning frames such as self-aligning top rolls, suction devices to eliminate the use of scavenger, circulating water jacketed motor to prevent heat dispersion from taking place within the operating room, etc.

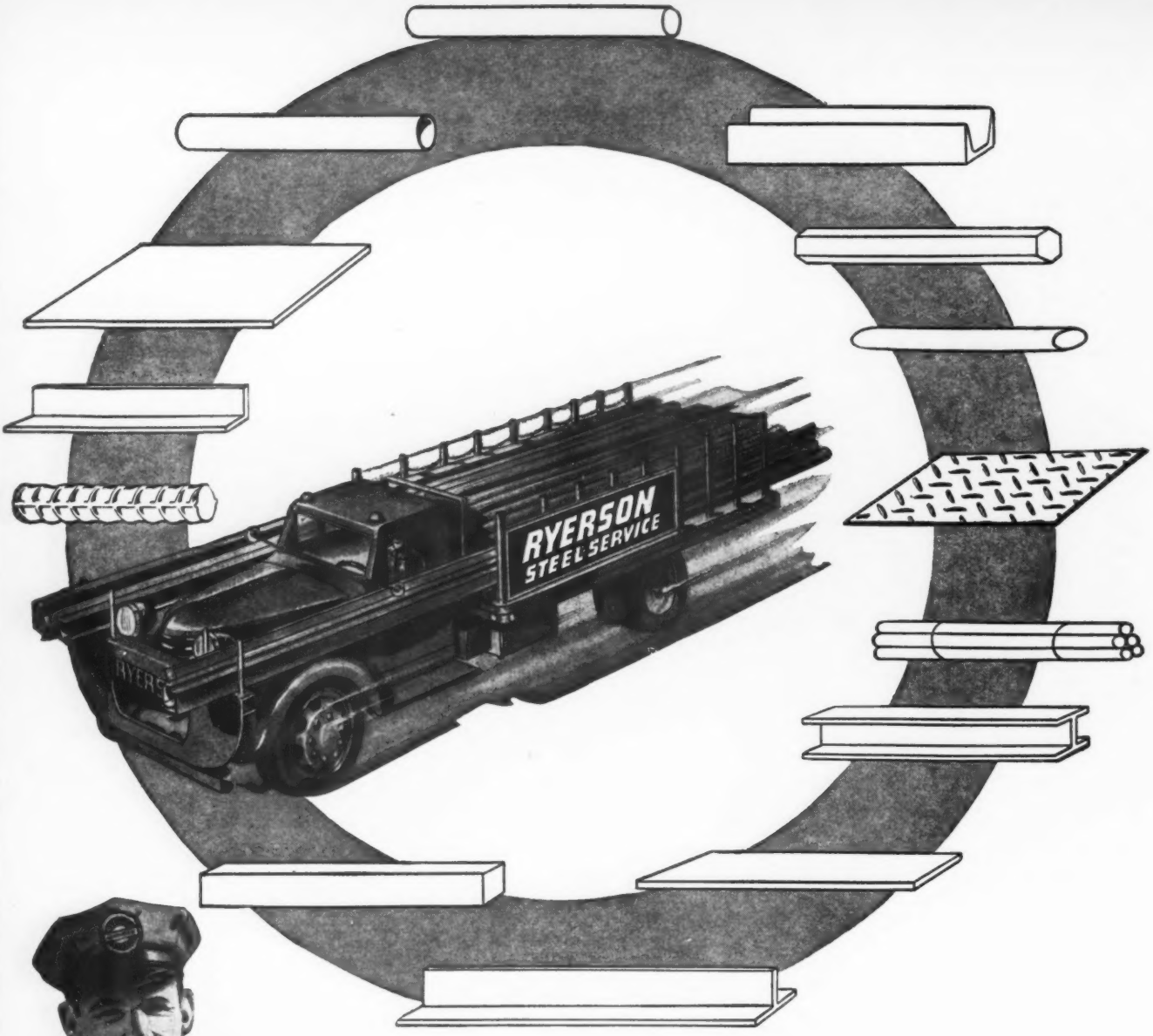
In the line of skein winding, Schweiter presented a motion disconnecting the winding spool from the driving wheel when the tension reaches beyond the point of safety.

(Continued on page 228)

* Abstracted from paper presented May 7 before American Association of Textile Technologists.



This 12-unit shuttleless ribbon loom, Type 24B, is one of the Saurer line. It uses all-metal harnesses.



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Special Techniques Required for CIRCULAR-KNIT FINISHING

After blending and dyeing in a dyebeck, knit fabrics are extracted, spread, and dried.

HIGHLIGHTS: *Only few differences between finishing of circular-knit and woven fabrics—Dyeing usually done in rope form in a kier or beck—Spreader placed inside tube of fabric fixes finished width—Oil spots, dirt, etc. are difficult to remove.*

By IRVING TEPLITZ, *Richard Finishing Co., Inc.*

THE FINISHING of circular-knit cloth is essentially a problem of converting. Cotton jersey, for example, may be finished for use as underwear, polo shirts, infant's wear, fleece, bathing-suit lining, glove lining, furniture slip covers, and other uses. Converters, who previously concentrated on woven fabrics, find that they cannot ignore knit goods; and the manufacturer of circular-knit goods and the converter have a mutual interest.

It might be said, that circular-knit goods are finished as any cotton, rayon, acetate, or wool woven fabric except for those few circumstances which require methods peculiar to circular-knit goods. By circular-knit goods, the reference is made to those cloths known as jersey, rib, and interlock, as contrasted to sweaters, knitted bathing suits, and girdles.

PROCESSED IN ROPE FORM. Circular-knit goods are dyed and bleached in rope form, either in a kier or dyebeck. Excess water is extracted either by a centrifugal extractor or by a set of squeeze-rolls similar to a laundry wringer. The cloth is then put through a quetsch or mangle; here, it is impregnated with the different finishing materials. The fabric is dried by passing it through a loop-dryer; the antiquated method of hanging it on sticks to dry overnight is very seldom used. After drying, the cloth is put through the circular-knit finishing calender and folded or rolled up on a paper tube. The knit-goods calender has very little in common with the type calender used for finishing silk or rayon satins, being more of a tuber with an open steam device and two small rollers which may or may not be heated.

In shape, circular-knit fabric can be likened to a tube. Yet by means of the spreader, the tubular fabric is handled very much like flat-woven goods in the finishing operations, except that the cloth is of double, rather than of single thickness. The spreader is a thin rectangular-shaped metal bar or pipe which is inserted into the inner diameter of the circular cloth and placed against two small rollers so that the movement of the cloth holds it in place. The spreader has three functions: it is a means of fixing the width of the cloth; it is a means of separating the two folds of circular cloth; and it is a means of giving the cloth a flat form. Spreaders are used in front of the squeeze rolls, the quetsch, and the finishing calender.

FOR WOOL JERSEY. Woolen and worsted jersey is handled on a type of equipment different from cotton, rayon, and acetate equipment. Wool jersey is scoured, dyed, washed, and fulled by processes familiar to the dyer and finisher of wool woven fabrics. The cloth is put into a centrifugal extractor (never squeeze-rolls), and is passed over a vertical-pipe dryer which blows hot air through it. The cloth is decated and calendered vertically. These processing steps take cognizance of the felting characteristic of the wool fiber and also of the reaction of the wool fiber to water, soap, and steam.

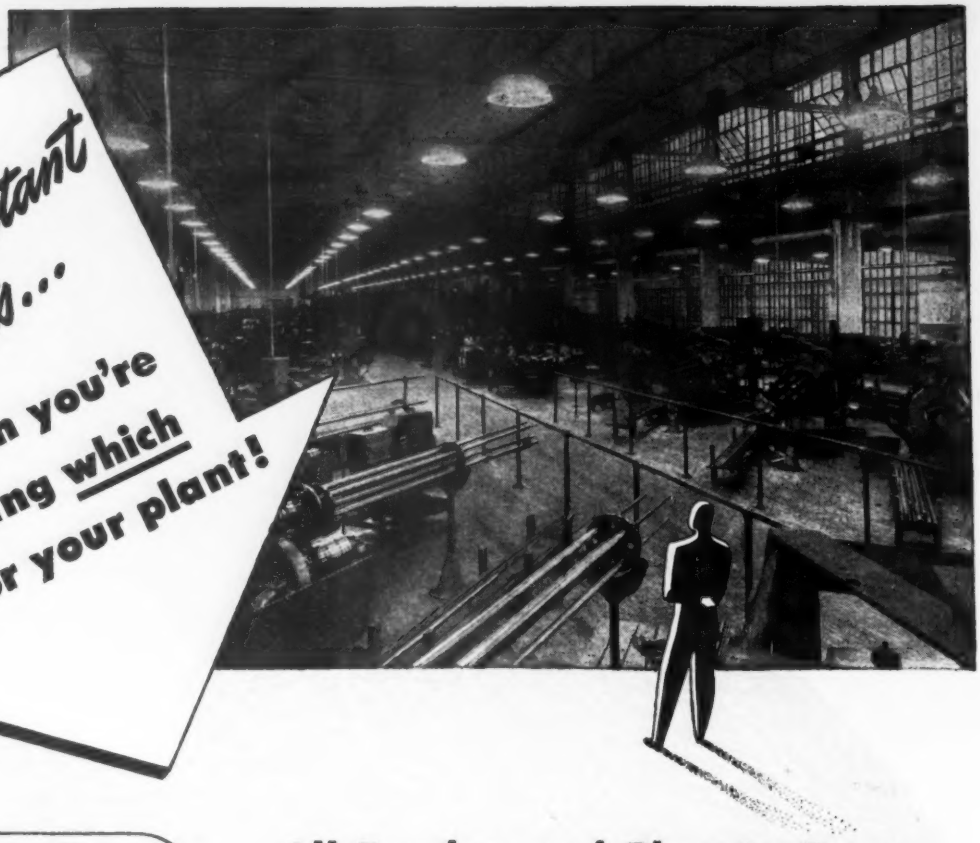
The presence of oil spots, dirt, lint, and similar defects makes fabric undesirable for commercial purposes. The removal of these defects is difficult for the dyer because the type of processing used in finishing wool knit goods is more of the expensive dry-cleaning type than of simple scouring and washing. Because oil and dirt spots are usually caused by graphite or machine oils when the yarn is spun or the cloth is knitted, they are best eliminated at their point of origin. When vat-dyed polo-shirt stripes are knitted, the dyed lint flies into the air and must be kept away from cloth been knitted for piece dyeing, if any is nearby.

Circular-knit cotton cloths cannot be mercerized in the piece because they cannot be put under tension for treatment with caustic soda: the action of caustic soda on a relaxed cotton fabric is a shrinking process, not a mercerizing one. Mercerized circular-knit cloths must be knitted from mercerized yarns.

Circular-knit goods have a tendency to curl at the edges if cut, due to the elasticity of the fabric; it does not lie flat on the cutting table. A chemical solution known as "non-curl" or "anti-curl" is applied to circular-knit goods to facilitate handling by the cutter. Cotton jersey used for the rubberizing trade is split, opened to full width, and gummed at the edges. The gummed edges lie flat and will not curl. The usual way of gumming edges is by means of a pin frame.

Circular-knit goods are split during the last calendering by inserting a razor

(*Continued on page 188*)



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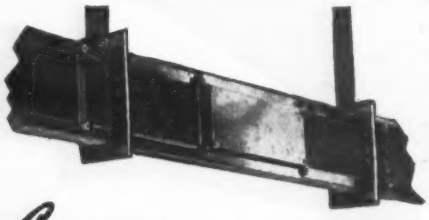

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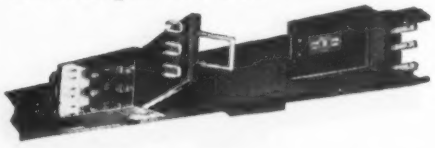

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Mill Should Figure Closely on Its MACHINE-SHOP NEEDS

HIGHLIGHTS: *Primary decision is whether own shop is economy over using nearby, independent shop—Inside shop should be adequate or not set up at all—Tools and materials for minimum shop are listed—Mere size of mill not always a criterion.*

By CECIL H. SMITH
Galt, Ontario, Canada

THE SIZE, equipment, and personnel of any textile-mill machine shop depends largely on the extent to which that mill plans to make its own repair parts, or to recondition broken or worn parts. It is to be expected that a considerable amount of machine-shop work will always be required by a mill, and the alternate to having a complete shop of its own is a close relationship with some machine shop in the immediate vicinity.

If the mill does its own work, it may get a quicker repair owing to the fact that no time is lost in sending its work out and getting it back. However, if the mill suffers a large breakdown, or two or more breakdowns at the same time, the average mill shop is likely to be overloaded. Possibly under such circumstances, faster work can be had from a job shop. Operation of the mill's own machine shop eliminates the element of profit which must be figured in by the job machine shop, but the mill will recognize that the cost of its own machine shop is not only wages and materials; but, of course, includes interest on the investment, charge for the space used, and also cost of power, heat, light, etc. The mill pays for idle time in its own shop, but pays only for the time it uses in the job shop.

THE OUTSIDE SHOP. The outside machine shop has a competitive situation to meet and is being constantly stimulated to do its best work. The mill shop has no such competition and few mill superintendents are trained to know what constitutes a reasonable day's work for a machinist or a welder. The outside shop should also be able to offer a mechanical supervisory service leading to the improvement of weak machine parts and ready development of special devices or machines to serve the particular needs of that mill as occasion demands.

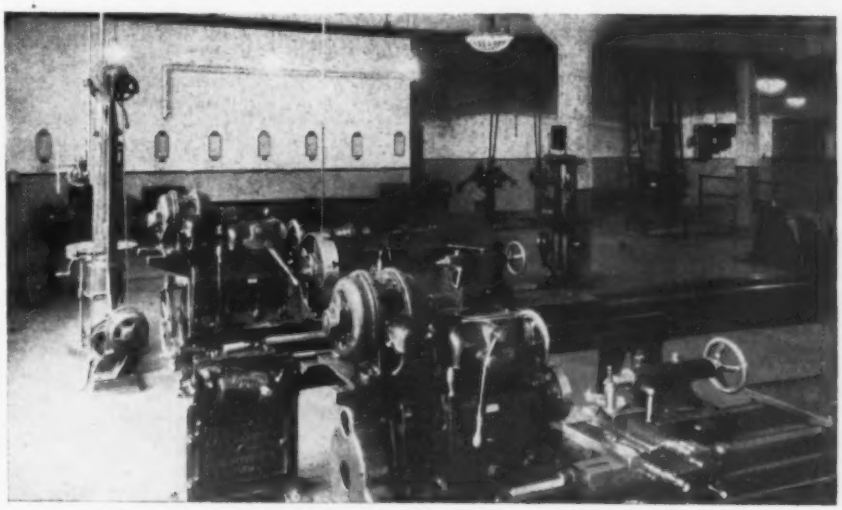
The author operated a machine and welding shop for 25 years and supplied constant service to seven textile mills in his immediate vicinity, in addition to other work. Obviously, local conditions are important in bringing any mill to decide on the extent of its machine shop, since, if it is not possible to get work done within a reasonable distance, it will be more necessary for the mill to put in its own repair equipment despite any other considerations. However, the matter should always be considered in the abstract. A shop should not be set up merely for the purpose of giving some promising machinist a job. Often, mills are over-persuaded by their fixers or repair men who want the equipment installed so that they can learn to operate it at the firm's expense. It has happened that when these men become reasonably able, though perhaps not thoroughly competent, they want more wages; and, if refused, are prone to go elsewhere in an attempt to capitalize on what they have learned.

Experience has shown that a mill should install a reasonably good setup for its particular needs or not go in for machine-shop work at all, since the business of doing part of a job and sending it out to be finished is likely to make it much more expensive than if it were done in its entirety either by the mill or on the outside.

EQUIPMENT FOR MILL SHOP. The minimum amount of equipment required in a mill repair shop may be of interest to some of the smaller or medium size plants which have not in the past satisfactorily solved their problems along this line.

For welding, the shop should have both acetylene and electric equipment. The acetylene process is used for welding castings, heating pieces for

(*Continued on page 192*)



If a textile mill is going to set up its own machine shop, it should go into all details and compare cost against work done by a job shop.

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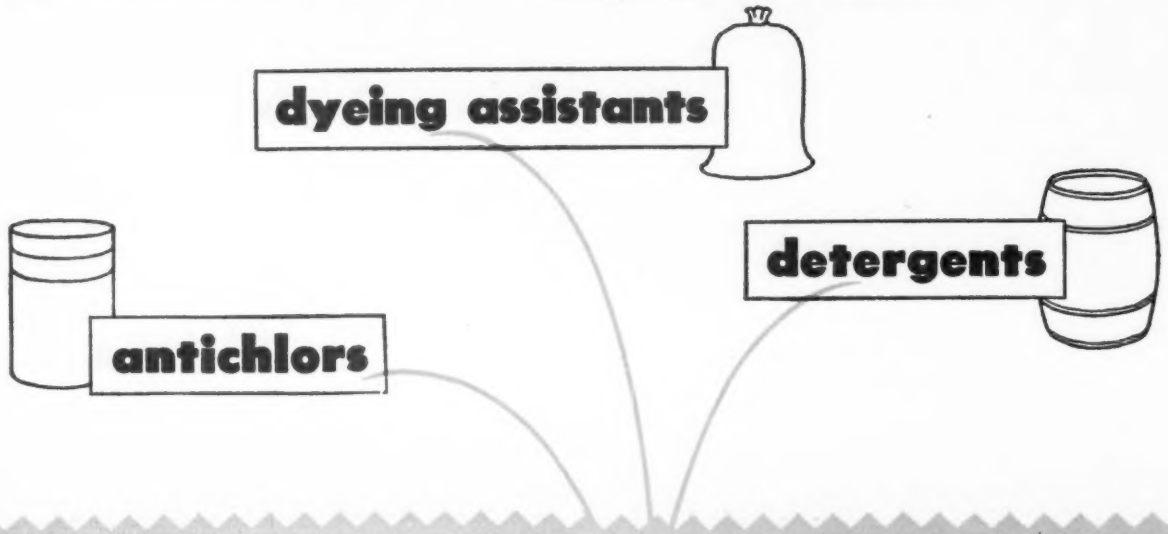

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Share Forum at National Seminar

HIGHLIGHTS: *New French worsted machinery eliminates two operations, permits higher drafts—Crimps in wool can be increased on sheep, wool can be modified chemically—Place for tricot fabrics outlined—Modern processing depends upon instruments—Longer skirts and more colorful hosiery foretold during National Textile Seminar at Shawnee-on-Delaware.*

EMPHASIS WAS PLACED on the importance of marketing textiles and their manufacture, as well as on machines and fibers, during the second National Textile Seminar sponsored by the Philadelphia Textile Institute. It was held last month at Shawnee-on-Delaware, Pa., and was attended by approximately 100 leading personalities in the textile industry. Dr. Milton Harris, director of research, Milton Harris Associates, was the seminar leader.

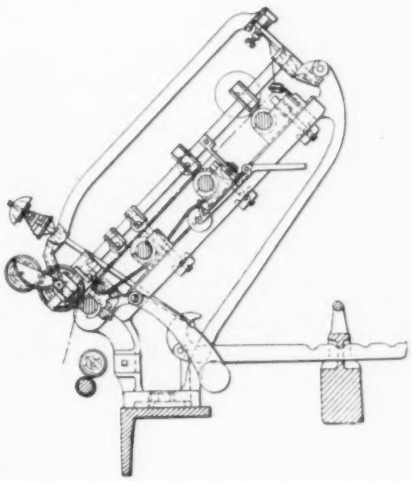
WORSTED MACHINERY. The only discussion devoted to new production machinery was by George F. Bliss, sales manager of Atkinson, Haserick & Co., who told of the modern Bobinier-Intersector and the Gills-Frotteur, for use in French worsted-spinning systems. He stated that they "give much better control of the fibers than porcupine machines, as they eliminate the curve enforced by the porcupine and replace this with straight-line drafting, permitting a much closer approach of the fibers under control to the nip of the front roller. . . . The draft of these machines may be increased to seven and one-half from the four draft which was utilized on the porcupine machines."

With the new machines, he said, two operations could be eliminated and the normal set for producing French-worsted yarns could be reduced from nine to seven operations. "A modern French set," he pointed out, "would be made up approximately as follows: The first three operations would be first, second, and third intersectors. The fourth would be a coarse Bobinier-Intersector. The fifth would be a fine Bobinier-Intersector or Gills-Frotteur for fine counts. The sixth operation would be the Avant-Finnisseur, or before-finisher; and the seventh would be the finisher . . . total number of doublings—3,240."

"The standard French spinning frame of today," he said further, "is equipped with a long-draft system permitting drafts of 15, making fully as good a yarn as was previously made with a draft of ten on the conventional five-roll system." The new drafting arrangement can be seen in the accompanying illustration.

In the discussion period following the presentation of his talk, Mr. Bliss compared the French and American systems for producing worsted yarns. He felt that within a running length of yarn the American system gave uniform results but that it did not from one yarn to another of supposedly the same count.

WOOL RESEARCH PROGRAM. The first half of an extensive research program in wool has already been started in Australia, according to Neville A. Whiffen, officer in charge, scientific research laison office, Australian embassy, Washington, D. C. The program already started has to do with the production of wool; and one very significant fact already found is the importance of copper, cobalt, and zinc in the diet of sheep.



French-spinning drafting roll set-up is capable of 15 draft as compared with ten for conventional five-roll systems. The apron is an important part of the new assembly.

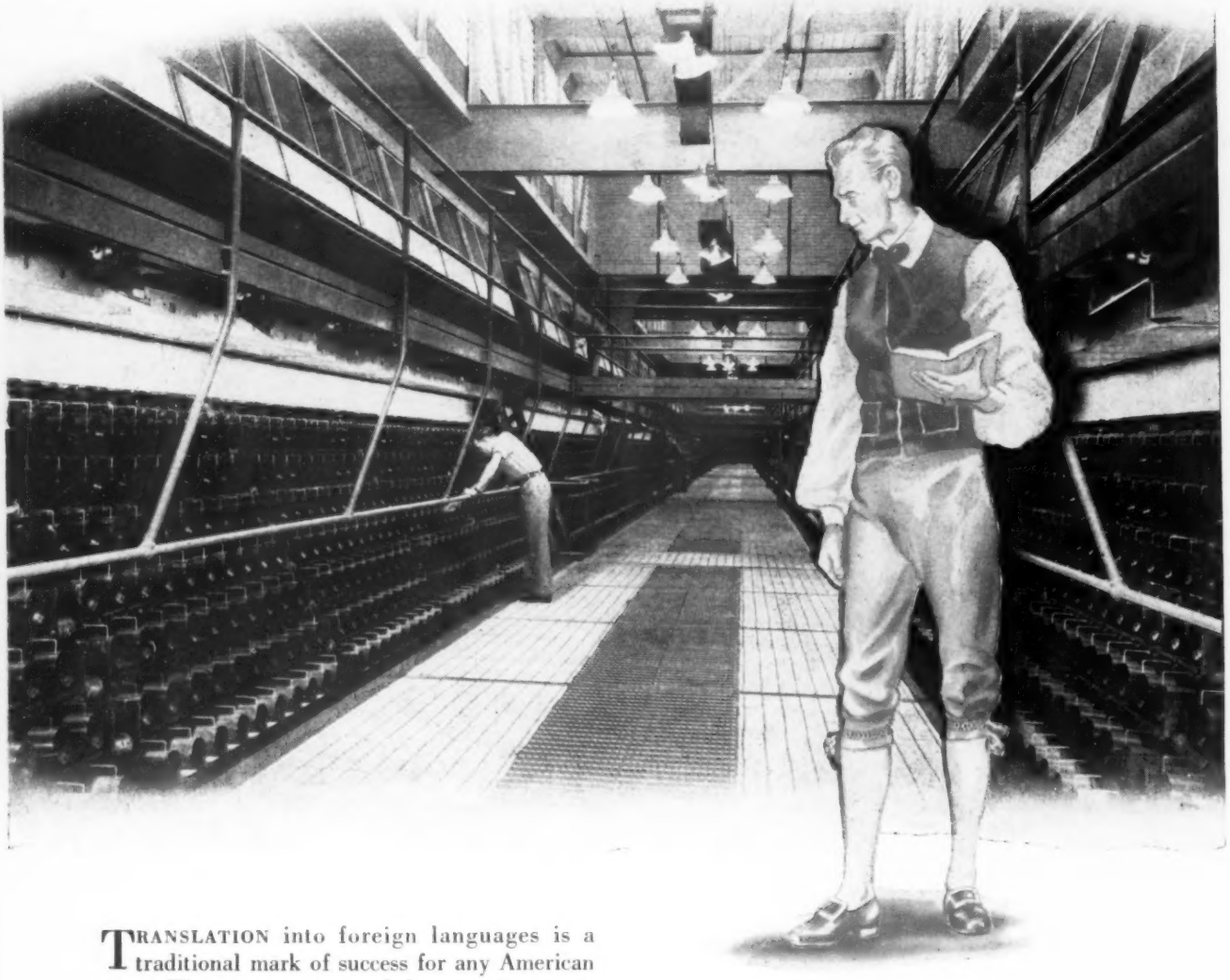
Both these samples of wool were grown on Merino sheep that were virtually identical. The wool with the finer crimp is attributed to copper content in the sheep's diet. The relatively uncrimped "steely" wool came from a sheep whose diet was deficient in copper.

Illustrated are two samples of wool from identical Merino sheep in a controlled experiment in which the only known variable was the copper sulphate fed. The wool with the fine crimp came from a sheep that had adequate copper in its diet, whereas the relatively uncrimped "steely" wool came from a sheep whose diet was deficient in copper. It has been found, Mr. Whiffen reported, that seven and one-half milligrams of copper per day give the greatest yield and value of wool. The copper usually finds its way to the sheep's pouch through fertilizers applied to grazing land.

The second half of the Australian research program, awaiting the finding of a suitable director (possibly a U. S. citizen), will deal with mechanical processing of wool. Standard mill equipment will be used in this phase, but improving equipment will be a part of the program.

(*Continued on page 210*)

Sweden begins an American "continuous" story



TRANSLATION into foreign languages is a traditional mark of success for any American story. The success story of the most important development in rayon manufacture—the Continuous Process—is now being translated into Swedish. Joining rayon producers in other foreign countries, Aktiebolaget Cellull of Sweden, has acquired rights to the revolutionary Continuous Process.

By this process, an achievement of Industrial Rayon research, rayon yarn is spun, washed, desulphured, bleached, treated, dried and twisted in one continuous sequence of operations. With knots and broken filaments reduced to a minimum by the elimination of package processing, the yarn "rides the reels" while processing solutions are applied evenly and thoroughly to every inch of every filament. The resulting uniformity means higher operating efficiency for mills, more even dyeing for finishers.

The superior yarn produced by the Continuous Process since its introduction in 1938 has proved its worth in every product in which it is used—from delicate fabrics to sturdy tires. There was little lapse of time after patent rights were made available for foreign purchase in 1945, until foreign producers took steps to bring to fabric mills and consumers in their countries the advantages of the American "continuous" story.

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Electrostatic Filter Cleans Air For YARN-PACKAGE DRYING

HIGHLIGHTS: *Mill in soft-coal-burning town suffered damage to 5% of its yarn in compressed-air drying—Simple mechanical filter alone proved inadequate — Electrostatic air cleaner solved the problem.*

By H. L. DOZIER
Superintendent of Dyeing, Adelaide Mills

ANNISTON, ALA., is an industrial community. Mills, foundries, chemical plants, and railroads using bituminous coal create, especially through the winter season, an atmosphere that is far from clean. Climatic conditions plus the almost universal use of soft coal produce a continual smoke haze, or "smog" as it is termed, throughout the winter months. Sometimes it is light, sometimes dense.

When this heavily contaminated air, combined with the dust and fly from the mill itself, was forced through package-dyed yarn for purposes of drying, it was in a compressed state and the amount of dirt and smoke carried was consequently multiplied over normal-pressure air conditions. The package of yarn itself acted as a mechanical filter element to arrest the particles of dirt borne by the air. As a result, as much as 5% of the yarn, and sometimes more, was discolored or spoiled and had to be put into waste or redyed into darker colors.

A mechanical filter was first tried in an effort to solve this problem. For a time, this arrangement gave good results, but, as filtering continued, the felt element would clog up with the filtered material and the flow of air would be correspondingly retarded. This automatically lowered the drying capacity, often as much as 50%.

USES THREE BLOWERS. At the present time, the plant has three machines or blowers in operation. One is used for extracting excess water from the packages; the other two are for drying the packages of yarn after extracting. The extractor and one dryer-blower have been in operation for some time using mechanical filters. Recently the mill installed a new blower and at that time called on the representative of Raytheon Mfg. Co. to discuss the practicability of installing an electrostatic filter on the blowers. After a survey of conditions, the management installed one electrostatic filter which cleans all the air going to the blowers, and these blowers in turn now feed cleaned, hot air to the extractor and the dryers.

The air cleaner has a capacity of 10,500 c.f.m. and can supply all the air required by the three blowers. It is installed in a special metal housing in the basement of the dyehouse, as shown in Fig. 1. The air passes through the cleaner and is piped to the three blowers by a main duct with properly located take-offs for each blower, as shown in Fig. 2. The problem was rendered somewhat difficult on account of restricted space, but Fig. 2 shows how the system was finally arranged.

PROBLEM SOLVED. Since the installation of this equipment, the dust problem, which troubled the finishing department for many years, has disappeared. None of the smoke or dirt of the atmosphere is now blown through the packages with resultant spoilage of yarn. The flow of air is no longer restricted by clogged filters, and drying production has correspondingly increased.

Tests of the new electrostatic filter indicate an efficiency of 90%, which is much higher than that of the older type of mechanical filters. These tests were run under the "Blackness and Discoloration Test" method developed by the U. S. Bureau of Standards.

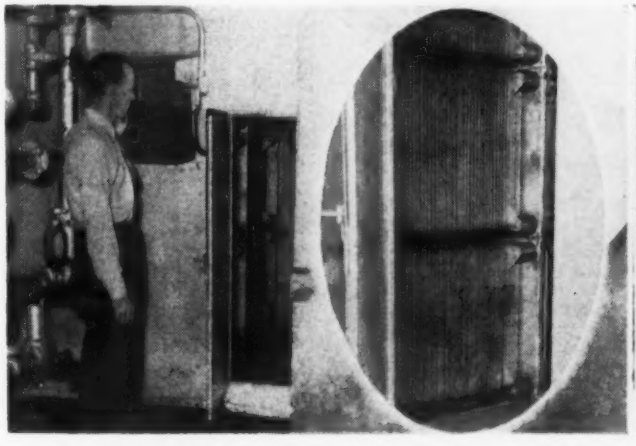

Fig. 1. The author is inspecting the power supply of newly installed electrostatic air cleaner at Adelaide Mills. Inset gives close-up of collector cells shown through access door.

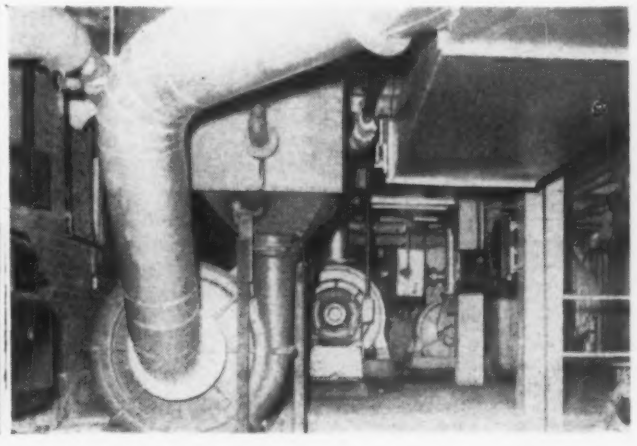

Fig. 2. Three blowers, shown above, receive air through square, overhead duct. These blowers supply clean air to the yarn dryers through heaters in the discharge lines.

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Basle Fair Is Focus for New SWISS MACHINERY

HIGHLIGHTS: *Fair attracts huge attendance—Pneumatic weighting for spinning rolls featured by Rieter—Sliver-can improvement—Faster drawing-in machines—Ruti featured improved, archless, silk loom adaptable for many constructions—Electric dobby applied to sample weaving—Loom accessories are improved.*

By HARRY SELIGMAN, *Textile Engineer, St. Gall, Switzerland*

THE SWISS INDUSTRY FAIR of last April at Basle covered 683,000 sq. ft. and recorded 450,000 visitors. With 237 exhibitors, the division of textiles was the largest single group, actually over 10% of the whole fair. Following is a summary of some of the products shown in the Textile Machinery Hall of the fair:

SPINNING MACHINES. J. J. Rieter & Cie. showed a ring-spinning frame for cotton yarns fitted with pneumatic loading of the top rolls. Instead of load weights on the roll stand, there is a lever mechanism operated by air pressure. The advantage lies in a large reduction of the floor load in the mill's spinning room. The pressure on the rolls is variable; and during the standing time of the frame, it can be eliminated. This machine is well suited for older spinning plants where it is not possible to strengthen the floor. Sagging of the floor, which often occurs when new machinery is mounted, is greatly lessened.

Rieter also showed a ring-spinning frame for worsted yarn fitted with an improved draw-box having the upper-rolls supported in half-bearings. The draw-box is, therefore, much easier to oversee. The rising laps on the top rolls are easy to remove.

The wool-combing machine exhibited has, in its external appearance, a feature common to other machines of this firm in that all driving parts are in a dust-proof compartment in which the motor and a dust filter are also placed. The nipping movement is much improved; so is the adjusting mechanism. The percentage of noils can be reduced to 5%. The performance is said to be superior to the old model.

A further Rieter improvement concerns cards which are equipped with batteries of three cans. As soon as the sliver gets a certain length, the ground plate turns, and a new sliver can is put under the delivery. A shearing mechanism separates the sliver during the displacement of the can. This arrangement saves labor in the mill, and the card never stops because the can is over-crowded. The attendant replaces the filled cans with empty ones without stopping production.

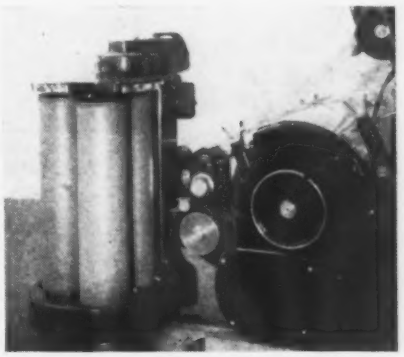
The exhibit of the Luwa A. G. Zurich featured a ring-spinning frame for cotton yarns with a pneumatic thread collector. This innovation saves cleaning of the lower clearer rolls of the draw-box, and it also prevents carry-overs.

PREPARATION FOR WEAVING. Zellweger A. G. Uster exhibited an improved machine for placing drop-wires into the warp. This machine has the capacity of the former automatic machine, up to 300 drop-wires per minute, either in the loom or outside of it. A supply containing 6,000 drop-wires permits handling of up to six rows of drop-wires. The machine is equipped with feeler arms which shut off when there is no drop-wire or end. The machine is applicable to all kinds of warps with a one-and-one lease. It facilitates the introduction of open drop-wires and lessens the down-time of looms.

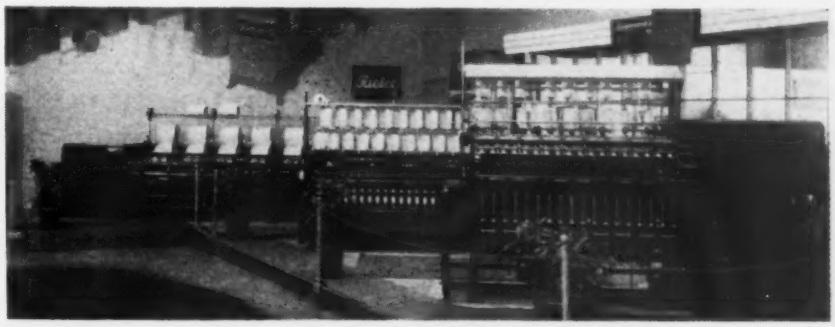
The company also produces knotting machines. The newest model is suited for tying warps with and without lease.

The Zellweger drawing-in machine has a performance of 12,000 ends per hour. It is suited for wool, cotton, and spun-rayon warps. The warp-drawing-in machine and the reed-entering machine are suited for weaving plants manufacturing a variety of different fabrics with frequent drawing-in of new warps.

The same firm also manufactures various textile testing and control ap-



Rieter showed a unit of three cans for receiving card sliver. Transfer from one to another is automatic and full cans may be replaced by empty ones without stopping machine.



This is a corner of the Rieter exhibit at the Basle Fair. Spinning frames are in foreground and comber in background. Note housings at ends of frames containing gears, controls, motors, etc.

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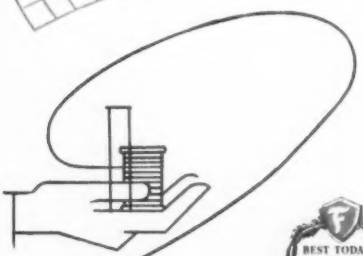

BEST TODAY... STILL BETTER TOMORROW

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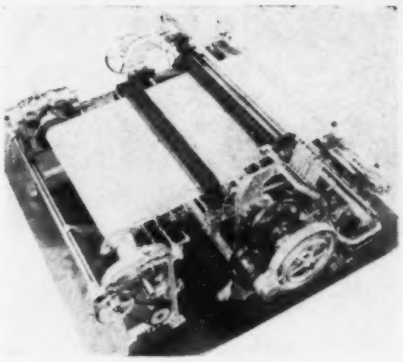
Velon*

THE FABRIC OF TOMORROW ON THE LOOMS OF TODAY

*TRADE MARK



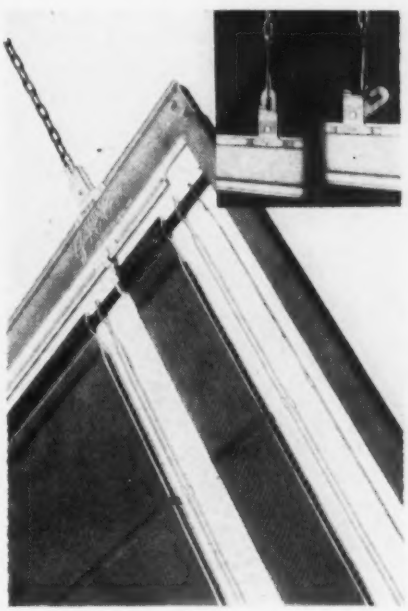
Ruti's improved model, low-built, silk loom has great versatility as it may be converted into various types as changes of fashion require different fabrics.

paratus. A yarn-testing machine controls the distribution of the fiber in sliver and yarn by means of a high-frequency mechanism. The laboratory can thus test the evenness of yarn or roving, and the spinner can adjust his machine if necessary. The company also features a modern staple-array apparatus which permits faster diagramming. A tension meter is offered for frequently and arbitrarily changing tensions. This meter permits exact regulation of the tension of bobbin-winding machines and is made for a wide range of tensions.

Schweiter A. G. Horgen offered an innovation in the design of filling-winding machines in the automatic feeding of empty bobbins on the automatic type MS for cotton and spun rayon. A large bobbin box fixed to the frame contains the empty quills which are fed to each winding head. In this manner one empty quill is always ready in the reservoir. As soon as the quill is completely filled and the empty quill is fed, the conveyor belt, which is running behind the machine, lays a new quill in the reservoir. This arrangement further reduces manual work. It is not necessary to place empty filling bobbins individually; they can now be thrown into a general container. Out of this container, they are fed to each winding head according to the demand. This apparatus is said to be the first Swiss development of the kind.

LOOMS AND WEAVING ACCESSORIES. The exhibit of the Maschinenfabrik Ruti was limited to several different looms, but the company also manufactures dobbies, jacquards, warping, and sizing machines. This year the company stressed its low-built silk loom. For eight years, it has been supplying this type of loom, which gives quite a different aspect to weave sheds. As can be seen from the illustration, the latest model has two features which distinguish it: (1) low construction without any overhead fittings; the sides of the loom about level with the top of the harnesses, with special lateral suspension of the harnesses and closed harness motion; (2) possibility of converting this loom into other types as desired: for instance from single shuttle to multi-shuttle, from a multi-box loom to pick-and-pick loom, from high-side frames to low ones carrying the dobby either above or below the top of the loom. In this way, it is possible for a weaving mill to carry out modification in manufacture required by change in demand, a point of special importance in the silk trade.

The flat filling bobbin is applied to this loom. It offers certain advantages in taking a greater quantity of yarn or by reducing the needed height of the shed. The flat quills are made either of specially prepared wood with a hard varnish finish or entirely of Bakelite. The slightly higher price of the flat quill does not necessarily add to the final cost, it is reported, as a mill needs only about half the quantity of the flat type in comparison with the round.

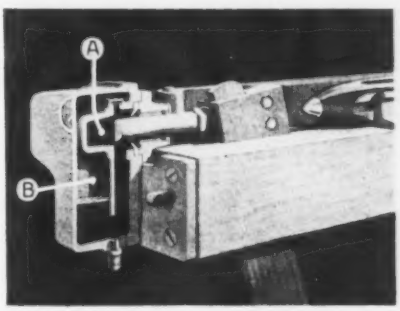


Improved harness frame using light alloys and new heddles is made by Grob A. G. Horgen.

A most discussed innovation was the electro-magnetic dobby of the Sample Weaving Co. Ltd., Liestal, which was shown by its inventor E. Schildknecht. This device makes possible the weaving of samples in a new way. The inventor pictured the two-yarn system of a fabric, the warp and the filling, as two crossing electro-magnetic currents, the circuits of which can be directed to actuate the hooks of a dobby. The harness movement is controlled by changing contacts on an electro-magnetic switchboard. According to the number of harnesses and the choice of the drawing, it is possible to get many patterns from one design with this apparatus.

Zama A. G. Chur exhibited for the first time a patented mechanism which acts as a buffer for the shuttle. Before the picking motion acts, the piston carried in its bearing is in its most forward position. The housing and the cylinder are filled with oil as a result of the combined action of the air-suction valve and the to-and-fro motion of the piston. When the shuttle hits the picker on the opposite side of the loom, the moving portion of the shuttle-picker-piston group travels a distance equal to the course of the piston. (See illustration). The oil in the cylinder offers to the piston a resistance proportional to its speed. Thus, the shuttle will always stop at the same spot independent of its speed at time of impact. The shuttle is held in this furthermost position by the swell until the next blow which throws the shuttle back. Then the released piston returns to its original position by the action of compressed air on the level of the liquid. The attachment aims at increasing production capacity by the possibility of increasing loom speed.

Grob & Cie. A. G. Horgen showed its improved harness frame and heddles. The horizontal member of the frame is made of a light metal alloy, Anticorodal, and the ends are of Lignostrone riveted to the top and bottom members. The raising and lowering hooks are adjustable and when closed have a tight grip on the frame. The heddles are stamped from one piece.



A patented buffer to take the shock of arriving shuttle was exhibited by Zama A. G. Chur. In cross-section above, A is the oil and B the compressed air.

Better Handling OF HOSIERY IN THE MILL!

FORMICA trays and hosiery carriers especially designed for handling hosiery during the manufacturing processes, save time — and, still more important, prevent the creation of many seconds. A much larger percentage of the product comes through as firsts saleable at the full manufacturer's price.

That difference quickly pays for the Formica equipment.

Both the tray and the carrier have been designed with sturdy reinforcing ribs to provide maximum strength with minimum weight. Design has been very carefully worked out to prevent shattering of edges so there are never any rough places on which fine fabrics can be snagged.

The trays and carriers are very smooth when you get them, and, because of the nature of the material and the design, they stay that way through long years of service.

This is equipment that really saves the knitter money!

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CONTINUOUS PEROXIDE BLEACH

Reduces Mill's Costs

HIGHLIGHTS: *Goods in rope form are bleached with peroxide at 100 yd. per min. at Dundee Mills, Inc., Griffin, Ga.—Temperature control on J-box nets 40% savings in steam—Quality of bleach by this method equals that by the kier process.*

By E. DALTON WHITE

INCREASED SPEED in production and less handling of the material in process made possible by use of continuous-bleach methods have enabled Dundee Mills, Inc., Griffin, Ga., to meet abnormal demands at a time when expansion of equipment was not possible. So successful has the present installation been that a new building is being planned to house another and larger continuous-bleach system. The rope form is now being employed for terry toweling, twill, drill, duck, sheeting, and jacquard napkins. The new system will be open-width and will be used for bleaching goods that are to be dyed.

The installation now in use is the first that employs sodium peroxide in the continuous-bleach system. It thus obtains the advantage of low-cost chemicals. Several adjustments have been made in the equipment since it was installed. The diameters of the final squeeze rolls in saturators and

(Continued on page 232)

Fig. 2. Accurate titration controls are necessary for continuous bleaching. Here is shown a control station where saturator baths are constantly checked.

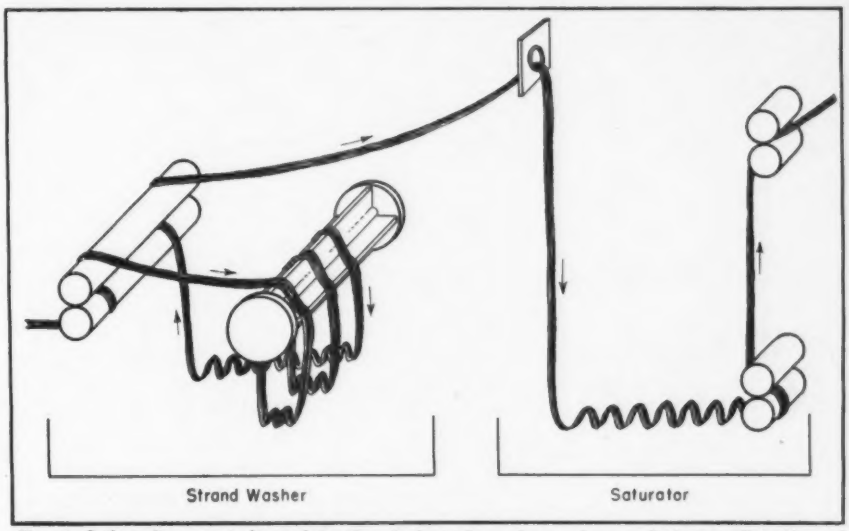
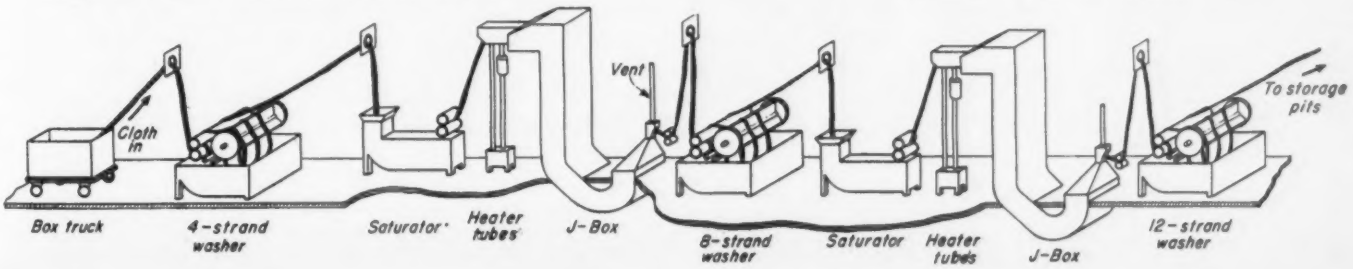


Fig. 1. S-threading, as indicated in the slack washers shown above, eliminates distortion of goods when passing through nip rolls in those washers. Previous direct threading was not satisfactory. Below is shown the complete range.

Fig. 3. Cloth passing through peroxide saturator bath in slack form. It is especially important that toweling be handled as slack as possible in order to maintain fullness.



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110

Uniform Yarns Are Made by MODERN MACHINES

HIGHLIGHTS: *Thorough blending and cleaning obtained from modern opening and picking equipment — Lighter laps and sliver present thinner sheet to card, result in more uniform sliver — Minimum processing, but higher quality, produced by improved drawing, roving, and spinning.*

By JOB J. MILLS, *Consulting Textile Engineer, Greenville, S. C.*

BETWEEN THE TURN OF THE CENTURY and the late 20's, there were not many improvements made in cotton-mill equipment or in the techniques employed in the processing of cotton fibers. Except for a few minor changes in the appearance of machinery, a mill erected in 1927 or 1928 employed virtually the same sequence of equipment as one built in 1900. There were several outstanding inventions during this period of time; but the ideas behind these inventions were slow to take hold, with the exception of the tape spindle drive introduced about 1914 or 1915, and the Washburn or self-weighted middle roll.

The conventional opening room of 1920 consisted of a bale breaker with an extended apron, which usually fed into a vertical opener, an inadequate arrangement from the standpoint of blending and cleaning. A modern opening line consists of four or five blending feeders, which break up the cotton into small tufts and deposit them on a feeding apron. The apron delivers into an opening machine, which in turn feeds into a cleaning unit having a Buckley type of beater section. Since cotton bales as delivered to the mill are quite variable in staple, grade, and character, the need for blending many bales to insure consistency is recognized today. Increased cleaning in the opening room, like blending, is looked upon in an up-to-date mill as a must.

PICKERS CHANGED RADICALLY. The conventional picker room consisted of either two or three processes, most of which were one-beater machines known as breakers, intermediates, and finishers. The breakers were fed by a gage box connected by pipe to the opening room, while the standard intermediates and finishers were fed by lattice aprons on which four laps were doubled.

The single-process picker was the first machine in the concept of modern equipment to take hold in the industry. Although many of the first single-process pickers were crude, they proved advantageous over the conventional systems. Later years brought improvements in parts of the single-process pickers, such as distributors and automatic feeding mechanisms, feed-roll design, and evener-motion assemblies. Today, single-process picking is used almost universally.

The revolving-flat card evolved from the stationary flat card and the railway head system between 1880 and 1885. There has been little change made in the card since that time; and, for the most part, the card today looks and functions the same as one built before

(Continued on page 176)

Condensed from address before South Carolina Division of Southern Textile Association at Greenville, S. C.

Fig. 1. Unlike the mill of 1900-1920, the modern mill makes frequent and periodic tests of lap, sliver, roving, and yarn uniformity. In this photo, two laboratory technicians are testing spinning yarn and tire cord in laboratories of the Shelbyville, Tenn., plant of the United States Rubber Co.

Fig. 2. The modern mill favors 50- to 55-grain sliver rather than the 60- to 65-grain sliver of the conventional organization. One advantage of lighter sliver: the carded web is collected from a finer sheet distributed over a larger area, thus tending to decrease sliver variation. (TEXTILE WORLD staff photo.)

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DECERESOL 1861 SOFTENER

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2. REDUCED BLEEDING of direct colors... *cracking* of naphthol colors. Minimizes gas-fading of certain acetate colors.

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5. GOOD DISPERSION AND STABLE SUSPENSION... eliminates need for additional wetting agents in most instances.

DECERESOL* 1861 Softener . . . a durable, exceptionally compatible, odorless, surface active colloidal material . . . "engineered" to meet the demands of modern high speed textile processing. Excellent for yarns and fabrics; also for knitgoods where retention of elasticity is desired.

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Centralized MAINTENANCE Reduces Mill's Repair Costs

HIGHLIGHTS: *Sewing-machine mechanics remain in central maintenance shop until summoned to the production room to make repairs—System of lights used to notify mechanics of breakdowns—Overhauling is done in the shop.*

By E. DALTON WHITE

A SYSTEM of centralized maintenance and signal lights to summon a mechanic has materially reduced production-time loss for sewing-machine repairs at E-Z Mills, Inc., Cartersville, Ga. As an integral part of the system, the mill has trained each of its maintenance men as a specialist on a particular type and make of machine.

Before the system was put into effect, it was necessary for the sewing-machine operator to report to the supervisor that a particular machine was in need of repairs. The supervisor, in turn, had to locate one of the maintenance crew and report the type of machine, its location, and the probable trouble. This method of reporting breakdowns required considerable time; and frequently additional time was lost because of the fact that a mechanic was not always in the maintenance shop, which necessitated a search of the plant.

Under the present system, all mechanics not on a repair job remain in the maintenance shop, and at least one mechanic is always available for an urgent job.

In order to overcome the difficulty of locating a mechanic in the mill, a signal system was devised by R. E. Miller, superintendent, whereby lights on the signal board in the maintenance shop would show the type and location of the machine in need of repair. At the same time, a corresponding light would show in the particular production area.

SIGNAL BOARD. A master signal board was made of plywood, and a number of standard electric-bulb sockets were installed so that different colored bulbs could be used to indicate the type and location of each sewing machine in the mill. Each of these bulbs was wired to a bulb of the same color located in the production area.

The master signal board has a total of 35 lights. The top row contains two white lights, which signal for a transfer clerk and can also be used as an emergency signal, and an orange light that signals for the plant electrician.

In each of the next four rows there are lights that correspond to the eight different production stations. The first row is green, the second red, the third blue, and the fourth yellow. Each light indicates the location, the make and type of sewing machine (such as a Flatlock, Singer, Union Special, Metropolitan, Merrow, etc.), and the type of operation (such as a button holer, button sewer, binder, facer, elastic sewer, etc.).

The mill has more than 400 sewing machines in operation and has divided its crew of seven mechanics and three apprentices according to the number and type of machines. All mechanics have been trained as specialists. For example, there are five mechanics assigned to work on Flatlock machines; and it is their responsibility to keep the 111 machines of this type in operation at all times. Proportionally, the other members of the maintenance crew are assigned to particular makes of machines.

This method of specialists has its advantages in that a mechanic becomes so familiar with each of the machines on his section that he can, at times, anticipate and avoid stoppages by prior adjustments. One of the drawbacks

(*Continued on page* 186)

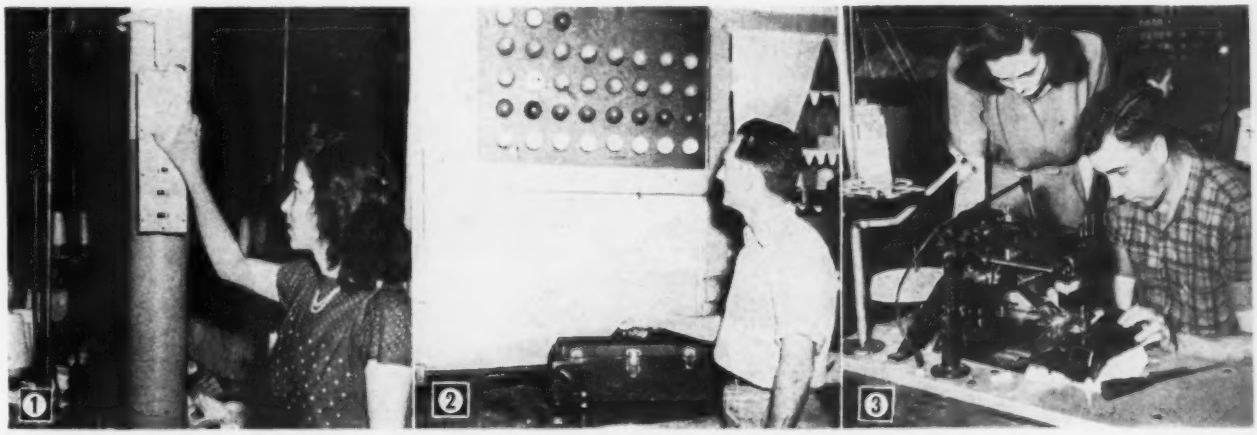
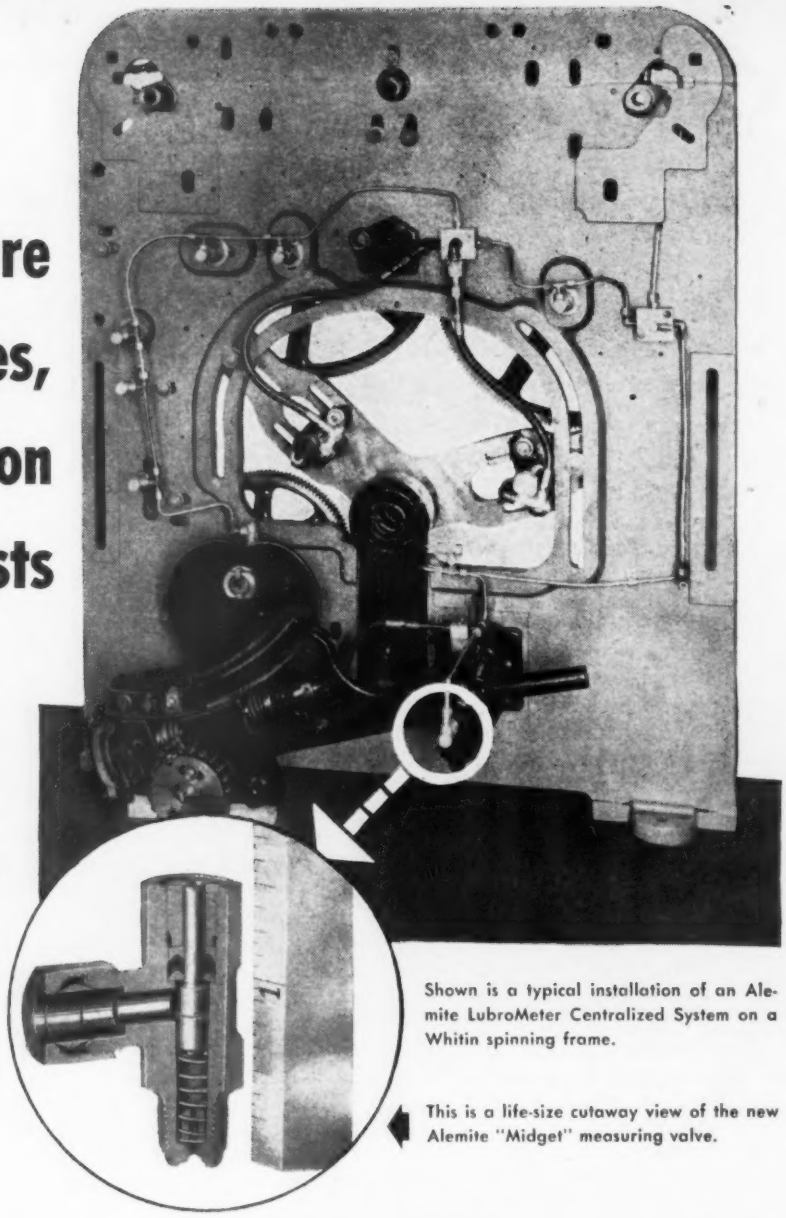


Fig. 1. *(Left) A sewing-machine operator signals for the mechanic by throwing the switch of the light assigned to her machine. The signal board is conveniently located near the center of the production area, and directly above the board are the area signal lights.* ***Fig. 2.*** *(Center) The signal of a breakdown also shows on this master signal board in the maintenance shop; and the mechanic, by light assignment, knows the type and location of the machine in need of repair.* ***Fig. 3.*** *(Right) When the mechanic arrives in the production area, the machine operator explains the stoppage. She remains at the machine until it is repaired in order to receive any instructions from the mechanic. If the repair will require much time, the mechanic sets up another machine and takes the damaged machine to the shop.*

How to Cure Lubrication Headaches, Boost Production and Reduce Costs



Shown is a typical installation of an Alemite LubroMeter Centralized System on a Whitin spinning frame.

This is a life-size cutaway view of the new Alemite "Midget" measuring valve.

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3. You give each machine More Productive Time because machines do not need to be stopped for lubrication.

4. You eliminate human error and bearing failures due to faulty lubrication.

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7. The original cost is small—and that cost can be amortized in as little as 3 months through the overall savings made by the Alemite system.

The Alemite "MIDGET" Centralized Lubrication System handles grease or oil, and can be installed for either manual or automatic operation.

Hundreds of bearings can be lubricated from one central point, with a measured quantity of lubricant without stopping the machine.

Adaptable to cotton textile machinery including opening machines; picking, carding, and combing machines; spinning frames; warpers, slashers, weavers; dyeing, printing, and finishing machines; and others.

In wool textile machinery including dryers, mixing pickers, and carders; spinning, spooling and warping machinery; looms; wet finishing, and shearing machines; and others.

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TEXTILE Equipment NEWS

Warner & Swasey Plans American Version of Sulzer Loom for Marketing in 1949

Warner & Swasey Co., Cleveland, Ohio, is commencing construction of five pilot models of the American version of the Swiss Sulzer weaving machine for which they have the American manufacturing rights, according to an announcement made by Charles J. Stilwell, president. This culminates nearly two full years of investigation and study of the commercial possibilities and engineering problems presented by the Sulzer machine.

Myron S. Curtis, assistant director of engineering at Warner & Swasey, is in charge of the textile development program.

It is expected that the five pilot models will be completed during the last quarter of 1947, and that, if tests of these machines are successful, the first production models will reach the market early in 1949.

Revolutionary principles applied in the Swiss weaving machine are to be incorporated in the five new "shuttleless loom" prototypes being developed by Warner & Swasey Co. The illustrated loom is one of four in test operation at the Warner & Swasey plant in Cleveland, where two years of study led to a decision to redesign the Swiss models in the interest of more economical manufacture and use in this country.

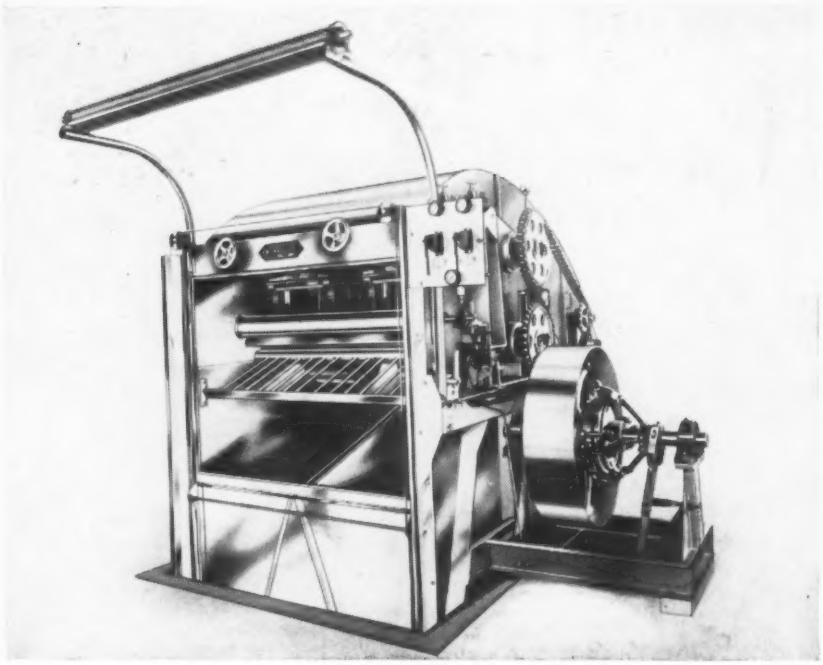
One of the four Sulzer-type weaving machines in test operation at the Warner & Swasey plant in Cleveland is shown. Five new prototypes are being developed culminating two years of investigation, and, if successful, production models will reach the market early in 1949. Myron S. Curtis, assistant director of engineering at Warner & Swasey, who is in charge of the textile development program, is shown above with William Benson (left) of the research staff.

Basic principles of the machine provide for the introduction of the filling yarn by means of a gripper which draws the filling thread from a single cheese of yarn as shown in the immediate foreground of the illustration. The small steel gripper obviates the necessity for bobbin winding and does away with use of a shuttle which in other looms rides on the yarn. The gripper never comes in contact with the warp yarns, since it is shot through a series of guides which are introduced between top and bottom sections of the warp when the shed is open.

New "Air Express" Fulling Mill

A new fulling mill is offered by Rodney Hunt Machine Co., Orange, Mass., which is made entirely of stainless steel and is equipped with air controls. The tub is of self-supporting construction and is easy to clean. The stainless-steel top has no parts attached and is thus removable for easy servicing of the machine. The main-roll pressure is maintained by Wring-Master pneumatic controls, and it is said that the exact pressure desired can now be immediately obtained by simply setting a gage on the front of the machine. Similarly, packing-box pressure is regulated pneumatically through air cylinders mounted on the packing-box clapper. An instrument panel at the front of the machine carries two gages and operating levers by which the pressure on either box may be set exactly and changed at will. The packing boxes are lined with stainless-steel plate over laminated plastic for insulation and supported by cast iron for extra strength.

An extra heavy roller chain drive to both main rolls from clutch pulley on



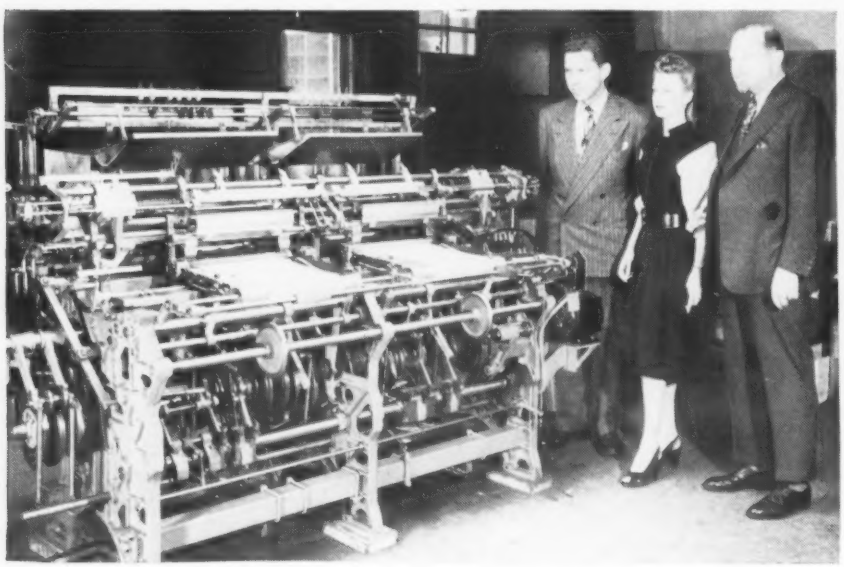
New "Air Express" is a stainless-steel fulling mill. (Rodney Hunt)

the side countershaft is said to save 25 to 50% on power over older machines of the same capacity. Heavy-duty roller or ball bearings are used throughout the machine.

New 2-Section Full-Fashioned Hosiery Machine

A two-section, full-fashioned, women's-hosiery machine has been designed and is being offered by Robert Reiner, Inc., Weehawken, N. J., under the trade name "Twin Knitter." It operates at 80 courses per minute through knitting and narrowing and can produce a round heel or a stocking which can be completed on the Reiner heeler. Welt turning is semi-automatic.

The Twin Knitter is being produced only in 54-gage at present, but will be offered in 45- and 51-gage as well. It is individual-motor driven, has up to 8 yarn carriers, and may be operated by unskilled help. A film showing the machine was exhibited at the Knitting Arts Exhibition as was reported in last month's TEXTILE WORLD.



The Reiner Twin Knitter, 2-section, full-fashioned, women's hosiery machine is fast and automatic. At right of machine are shown (left to right): Fritz Lambach, designer of the machine, a girl operator, and Dr. Robert Reiner, head of the producing company. (Reiner)

Torch Has Monel Head, Stainless-Steel Tubes

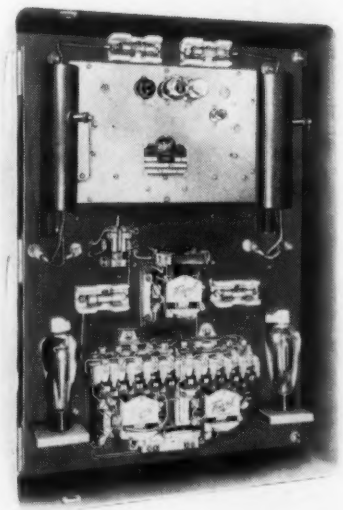
The Airco series 9000 cutting torch with monel-metal head and stainless-steel tubes, discontinued during the war years because of a shortage of critical materials, is once again on the market, it has been announced by Air Reduction Sales Co., 60 E. 42nd St., New York 17.

The new-type torch head, made of monel metal is said to assure long trouble-free service; the tubes, made of stainless steel reportedly offer great rigidity and heat resistance; the stainless-steel lever and ribbed handle have been designed to afford maximum ease of operation, and all connections are silver brazed to assure permanent leak-proof service.

A total of 22 interchangeable cutting tips are available for the torch, making it adaptable for almost every practical hand-cutting operation from removing rivet heads to cutting sheet metal and trimming plate, it is stated.

The standard torch is 21 in. long and weighs 3 lb., 4 oz.

Electronic Motor Control Gives Constant Speed



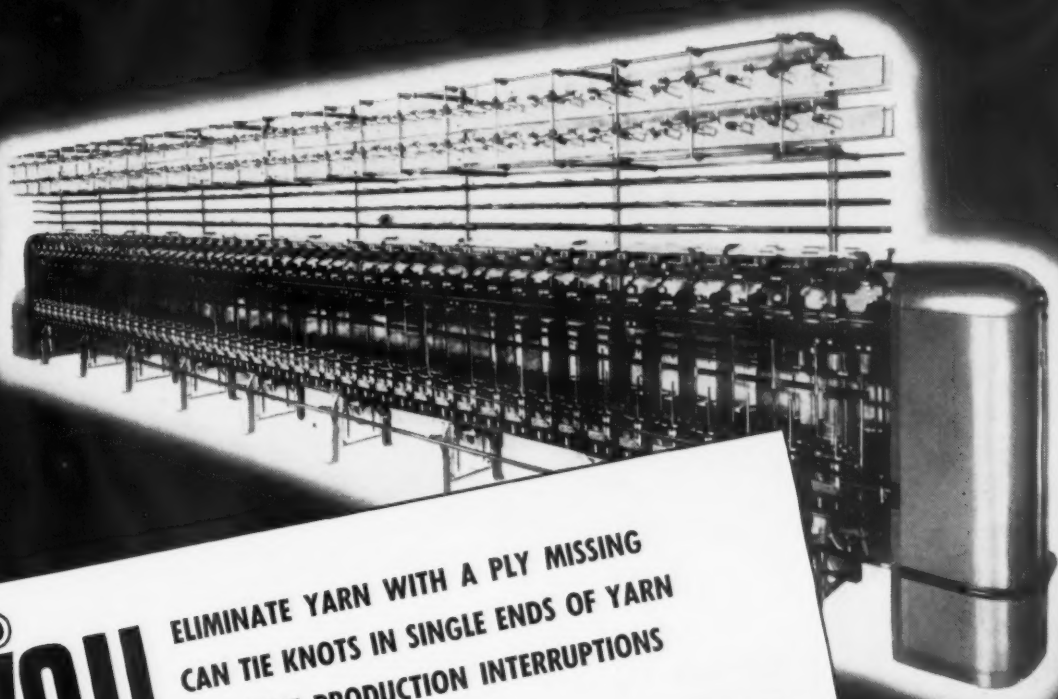
Control to ensure constant speed. (Federal)

Two models of a new electronic control for operating d.c. motors from a.c. power have been announced by Federal Electric Products Co., Newark, N. J.

One model is a general-purpose, reversing type applied to a 2-hp., 230-v., d.c. motor; and the second is a special control for an abrasive M-3 surface grinder.

The control is designed to regulate

When you use Atwood Ring Twisters . . .



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ELIMINATE YARN WITH A PLY MISSING
CAN TIE KNOTS IN SINGLE ENDS OF YARN
MINIMIZE PRODUCTION INTERRUPTIONS
ELIMINATE ROLLER LAPS
REDUCE DIRTY YARN AND WASTE TO A MINIMUM

HERE'S HOW IT WORKS

The instant a break occurs, in either one end or in the plied yarn, the STOP MOTION of the *new* Atwood Ring Twister goes into action. It automatically stops just the one spindle and its feed roll; the other spindles keep right on producing. Production loss is reduced to a minimum.

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UNIVERSAL WINDING COMPANY
STONINGTON, CONNECTICUT, U.S.A.

ATWOOD
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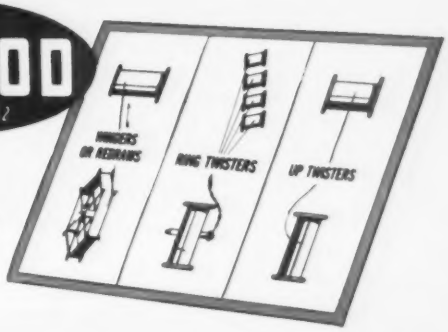
What's new in yarn machinery!



AD-17

motor speed closely to provide an almost flat speed-torque curve, with changes in load having little effect on speed. For any speed setting, performance is reported to be practically equal to that of a synchronous motor, even with a suddenly applied load.

Precise automatic current limiting reportedly makes it possible to preset the maximum allowable armature current and is said to be an important control feature. The electronic circuits limit the current to the preset value regardless of load, it is stated, so that even with the armature locked mechanically and the speed setting at maximum, this value of current is not exceeded.

With automatic current limiting, smooth, stepless acceleration from standstill is said to be possible without drawing excessive current from the line. This feature is designed to protect motor and control in case of overload, and to protect the load since current-limiting action is also a torque-limiting action.

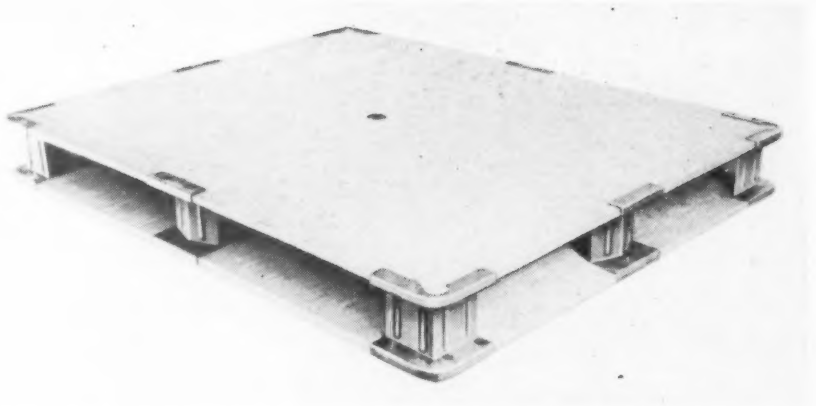
British Are Building Full-Fashioned Machine

The first postwar European straight-bar multiple-head full-fashioned knitting machine is being produced by Wm. Cotton Ltd., Loughborough, England, and is called the Bentley Cotton. Some machines have already been installed in England.

The machine is built in up to 32 sections, although many smaller-section machines have been ordered, such as 28, with some as low as 12. The machine is reported to produce a set of stockings in 35 min. ready for finishing on the Blackburn heeler, which is produced by the Bentley machine building group of which Wm. Cotton Ltd. is a part. The machine features a built-in electric motor drive with a transmission to permit a wide range of speeds. Low speed is sufficiently slow so that the operator does not need to turn the machine over by hand. Ranges are from three courses to over 100.

Designed principally for silk, the machine employs three carriers. It has what is reported a greatly improved fully-automatic welt. Light-metal alloys such as Duraluminum and Elektron are used. It is claimed that light-weight metals make possible a higher knitting speed and allow 220° of the cams to be devoted to the draw. Cam diameters have been increased; and high-tensile, torque-resisting shafts are used. The drafting shaft is used in Oilite bearings and is chain driven from the central motor.

All yarn changes are fully automatic. Sinker butts are tapered.



Durable pallets are constructed of 5/8-in. plywood decks with posts of plywood block or of metal; pallet is double faced, designed for four-way fork entry. (Clark)

Durable Plywood Pallets Have 16,000-Lb. Capacity

Durable pallets made of plywood have been announced by the Clark Tructractor Div., Clark Equipment Co., 258 W. Champion St., Battlecreek, Mich.

Constructed with 5/8-in. plywood decks and with posts of plywood blocks or metal, the durable pallet is said to weigh only a little more than half as much as a comparable hardwood pallet. The new pallet is double-faced, designed for four-way fork entry, and can be furnished in the metal-post construction for use with either hand-lift or with motorized pallet trucks.

Among advantages claimed for the plywood pallet are its unbroken, splinterless surface which minimizes damage to the material load; ease of strapping in both directions; ease and safety of handling, both loaded and empty; and suitability for safe, firm tiering.

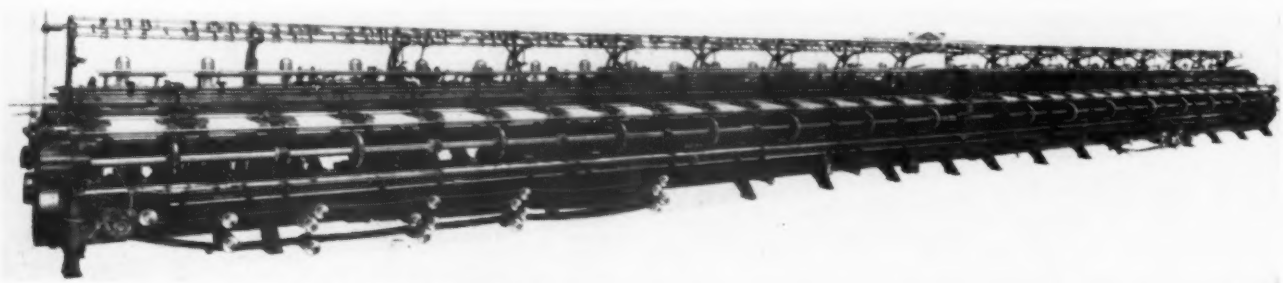
The plywood pallet is offered in sizes ranging from 30x40 in., with a 2-in. vertical clearance and weighing 36 lb., up to 48x60 in., with a 3¾-in. clearance weighing 89 lb. Capacities are 4,000 lb. carrying load, and 16,000 lb. static load.

Heavy-Duty Motors Rated 100 to 1,000 Hp.

Heavy-duty squirrel-cage induction motors for large power drives from 100 to 1,000 hp., 1,800 rpm. and lower speeds, and designed in drip- and splash-proof constructions, have been announced by Electric Machinery Mfg. Co., Minneapolis 13, Minn.

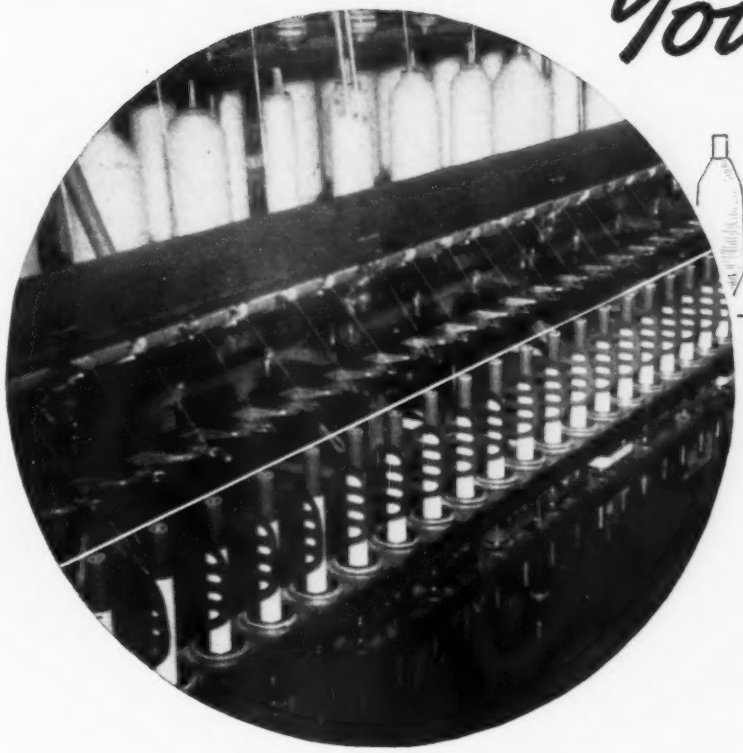
Fabricated-steel frame shuts out falling particles, makes operation quieter, and invites easy cleaning, it is reported. Inspection and blowing out are said to be simplified on larger ratings by access plates designed for speedy removal and replacement.

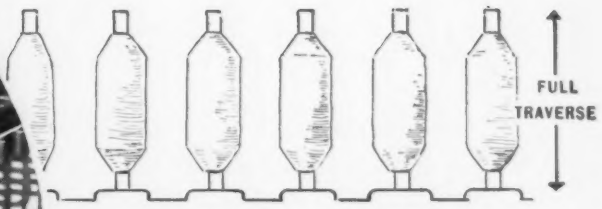
(*Continued on page 236*)



The first postwar European multiple-head full-fashioned knitting machine, the Bentley Cotton, is being built in 12 to 32 sections. Illustrated is the 32-section machine. (Cotton)

You get this –





LEVEL RUNNING

because of this →

The spindle fits the "cushion grip" with a gentle squeeze—to form top-drive contact . . . which breaks sharp and easy without drag or pull in doffing.

The SONOCO Straight Side Warp Spinning Bobbin permits uniform full traverse because it does not "ride-up" on the spindle. This "level running" feature alone saves money by allowing longer periods between doffs because more yarn per spindle is gained when uniform full traverse is maintained.

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Kinks AND SHORT-CUTS

★ **SAVINGS BOND PRIZE FOR JUNE**
(April Contest)

A $25 SAVINGS BOND FOR YOUR IDEA

A $25 Savings Bond will be awarded each month for the most useful "kink" published in this department. This contest is open to all readers of TEXTILE WORLD, and there is no limit to the number of entries any one person may make.

Contribution must be received not later than the last day of the month to be eligigle for the award for the second succeeding month. Items may pertain to production methods, mill engineering, safety, cutting costs, improving quality, speeding up production, in brief any little device, stunt, kink, or short-cut which you have tried out in your own mill which you believe will be helpful to other mill men. Items should contain sufficient detail to permit other mill men to utilize the ideas in their own operation. Previously published material is not eligible for the award. Judges of the contest are the editors of TEXTILE WORLD.

TEXTILE WORLD shall have the right to publish any item submitted. Items which are accepted will be paid for at our regular rate for this type of matter with extra payment for appropriate sketches or photographs. The sketch you submit need not be a finished drawing.

In writing to this department, give your real name and address as evidence of good faith and to permit payment for items accepted. Please advise whether your name may be used with the kink.

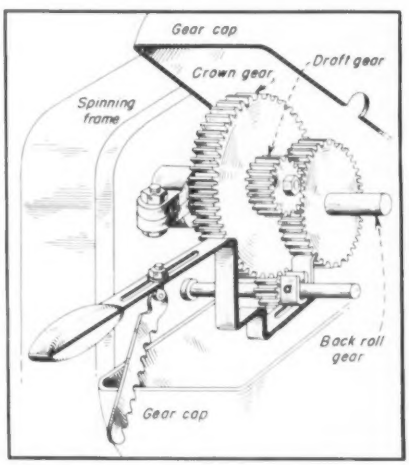
Contributions should be addressed to: Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York 18, N. Y.

Lock Back-Roll Gear to Avoid Cutting Down Ends

Loss of time, waste, and unnecessary work on roving frames and spinning frames frequently result from a fixer cutting down a frame or a side of ends when he changes a draft gear. It is not necessarily carelessness or lack of skill that causes a fixer to cut down ends, for it happens sometimes with a fixer who has had years of experience.

The cause, of course, is that when the draft gear that is running is taken off and a new one put on (in changing numbers of yarn or heavying or lightening on the weight of the yarn), the new gear does not mesh properly with the back-roll gear.

Another source of trouble, resulting in bad work, although the ends are not cut down, is that the back-roll gear may be turned slightly while the draft gear is being changed. This condition throws the tooth of the back-roll gear that was at the bite of the gears when the frame was stopped one or more teeth away from the bite of the new draft gear. If the gears are meshed properly, the ends may not be cut down; but there will be a thick or thin place in the yarn, depending upon whether the back roll was turned forward or backward.



Thick and thin places in the yarn and cut-down ends on a spinning frame, as a result of changing draft gears, can be avoided by locking the back-roll gear while a draft-gear change is being made. Bearing a fits around the under side of the front roll, and the ratchet lever holds the end of the tool securely in a groove between two teeth in the back-roll gear.

Most of this trouble in changing draft gears has been eliminated in our spinning room by the use of the gear-locking device shown in the accompanying sketch. This device will work on any make of spinning frame and will not injure the gears. Its only purpose is merely to lock the back-roll gear so that when the old draft gear is taken off and the new one put on, the same tooth of the back-roll gear will be at the bite of the gears. This condition ensures even drafting of the yarn that is between the rolls at the moment the frame is started up.

The material needed for making the locking tool is as follows: (1) one piece of flat iron $\frac{3}{16}$x1x20 in.; (2) one piece $\frac{3}{16}$x1x3 in.; (3) one piece $\frac{1}{8}$x$\frac{3}{4}$x8 in.; (4) two $\frac{5}{16}$x$\frac{1}{2}$ in. cap screws; (5) three $\frac{3}{16}$x1 in. rivets; and (6) two pieces of wood for making a handle. The wooden handle is optional.

Grind one end of the 20-in. length of 1-in. flat iron so that it is in the exact shape of a tooth in the draft gear (usually 24 pitch). At a point about $\frac{1}{8}$ in. from this end of the piece of flat iron, bend the iron to a 90° angle. About $\frac{7}{8}$ in. from this bend, make another 90°-angle bend in the iron in the direction opposite to that of the first bend.

At a point about $2\frac{7}{8}$ in. from the second bend, make another 90°-angle bend in the same direction as the second bend. Three other 90°-angle bends must be made as follows: (1) one inch from the third bend and in the opposite direction, (2) one inch from the fourth bend and in the opposite direction, and (3) three inches from the fifth bend and in the opposite direction.

The iron is now in the shape shown in the sketch, and a handle about 8 in. long is left. Rivet a piece of wood or leather to each side of the handle.

The ratchet fastened on a pivot at the under side of the handle is made from the 8-in. length of $\frac{3}{4}$-in. flat iron by cutting notches as shown. These notches should be ground so that they

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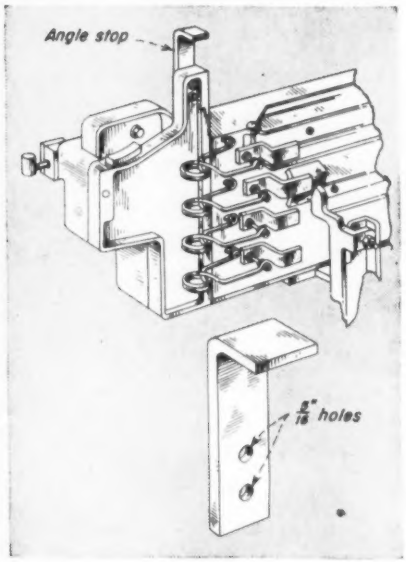
fit and hold securely against the bottom section of the gear casing. The bolt that fits through the slot in the handle and holds the ratchet should be adjustable along the slot. This adjustment permits the ratchet to be used on different sizes of gear casings.

U-shaped bearing a is made from the 3-in. length of 1-in. flat iron. It should be bent so that it fits loosely around the front steel roll near the front-roll gear. It should be secured to the main member of the tool by a bolt through an adjustment slot.

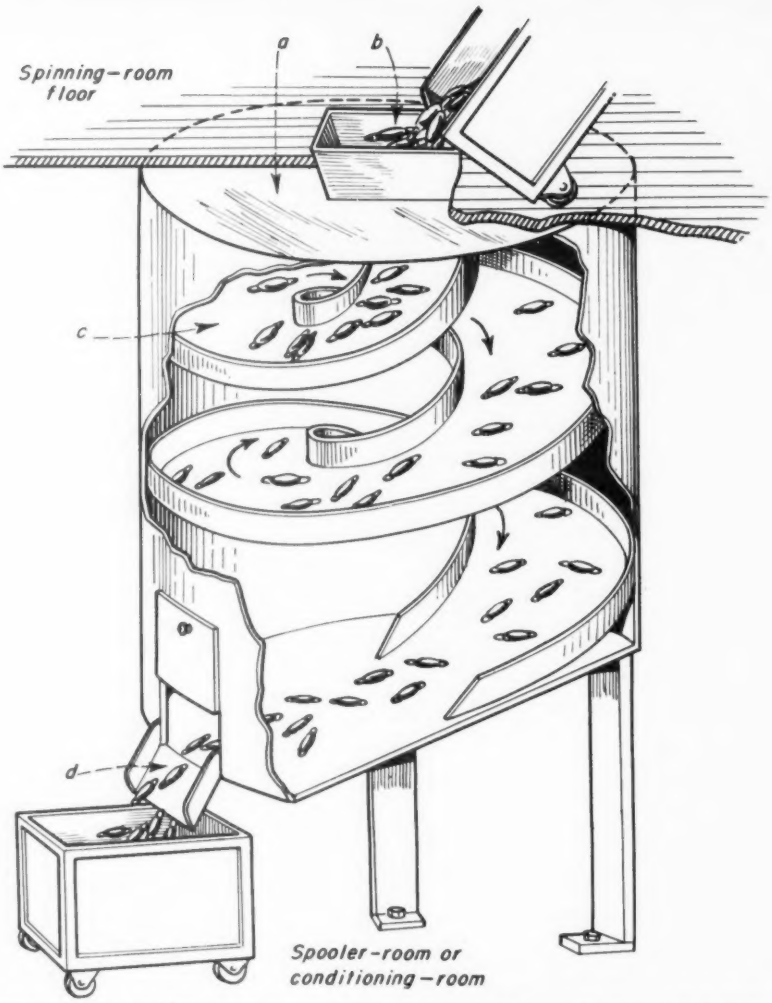
To use the tool, raise the gear cover of the frame and insert the end of the locking tool under the front roll. Let bearing a fit around the front roll and the end of the tool into a groove between two teeth in the back-roll gear. Raise the handle until one of the ratchet teeth catches securely to the lower gear casing. The tool, in this position, will hold the back-roll gear in place until the draft-gear change is made. (K-671) A. J. Redmond, West Gastonia, N. C.

Shuttle-Box Stop Prevents Damage to Loom



When a shuttle-box lifter rod breaks, the box may fly up and break the reverse take-up handle or another part of the loom. A small angle stop, such as the one shown here, made of 1/4-in. steel and fastened to the top of the box slide will prevent the box from flying out and causing damage to the loom.

To install the angle stop, drill two holes at the top of the box slide and tap them for 5/16-in. cap screws. Secure the angle stop to the loom at this point, with the angle end of the stop extending horizontally over the box. This location of the stop will permit the box some clearance when it is raised to the No. 4 position. (K-668) Richard T. Cooper, Methuen, Mass.



Yarn on spinning bobbins dumped into chute b is conveyed by gravity down spiral chute c to the spooler room or conditioning room on the floor below. Yarn may be removed at the lower floor by raising sliding door d.

Yarn Conveyed by Chute From Spinning Room

A materials-handling chute for conveying warp yarn from a spinning room to a spooler room on the floor below, or filling yarn from the spinning room to a conditioning machine on the floor below, can be constructed as shown in the accompanying sketch.

Build cylindrical inclosure a so that it extends from the underside of the spinning-room floor to a point about 3 or 4 ft. above the spooler-room floor. The bottom of this inclosure should be slanted toward the front to facilitate bobbins of yarn sliding toward the door at the front. The diameter of the inclosure should be sufficient to permit a steady downward flow of yarn on the spiral chute inside the inclosure.

At a point in the spinning-room floor convenient for the doffers or yarn handler to dump the yarn, cut a rectangular hole and install dumping chute *b*. Directly below chute *b*, build the open spiral chute c, bracing it to inclosure a. Chute c should be about 48 in. wide, 12-in. deep, and long enough to reach from the spinning-room floor to delivery point *d*. The door at *d* should be located 3 to 4 ft. above the spooler-room floor so that a yarn box can be pushed under the door and the yarn allowed to fall into the box.

Sheet metal should be used for constructing the chute, and the inclosure may be built of metal or wood.

The use of such a yarn chute will eliminate the necessity for transporting full boxes of yarn from the spinning room to the spooler room by means of an elevator. (K-642) E. Bentley, Montreal, Canada.

Orange—L'atelier d'impression, par Rossetti, 1764, tapisserie peinte sur toile.
Courtesy Columbia University Library

Manufacture of the printed fabric or *toile imprimee* was depicted on a series of panels by Joseph Gabriel-Marie Rossetti, designer at Orange, France, in 1764. The tapestry above shows proprietors and workers in the print shop.

Cloth was stretched on a table and a "block", or wood engraving covered with color, applied to it. When a number of shades were desired, additional colors were painted on with fine brushes.

By 1782, the copper-plate printing press was introduced, permitting designs of greater variety and perfection.

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KINKS & SHORT-CUTS
(*Continued from page 154*)

Sewing-Machine Pulleys Will Align Themselves

In the sewing room of our knitting mill, we had a considerable amount of trouble with sewing-machine belts wearing too fast. After observing the belts in operation and comparing their running with that of belts on machines that operated a normal length of time before requiring new belts, we decided that some of the pulleys on the driveshaft must be slightly out of line with the pulleys on the machines.

We tried to correct the alignment by "sighting" the two pulleys, but this method was not satisfactory. At last we hit upon the following plan:

The driveshaft pulleys on the machines that had been wearing out too many belts were loosened slightly, and the motor driving the shaft was started up. The loosened pulleys gradually moved laterally along the driveshaft until they were perfectly aligned with the driven pulleys on the machines.

In using this method of alignment, it is necessary to loosen the driving pulleys only enough to permit sidewise movement. If the setscrews that hold the pulleys are loosened too much, the pulleys will permit the shaft to move inside the pulley hubs.

Since readjusting out pulleys in this manner, our belts all run a normal length of time. (K-678)

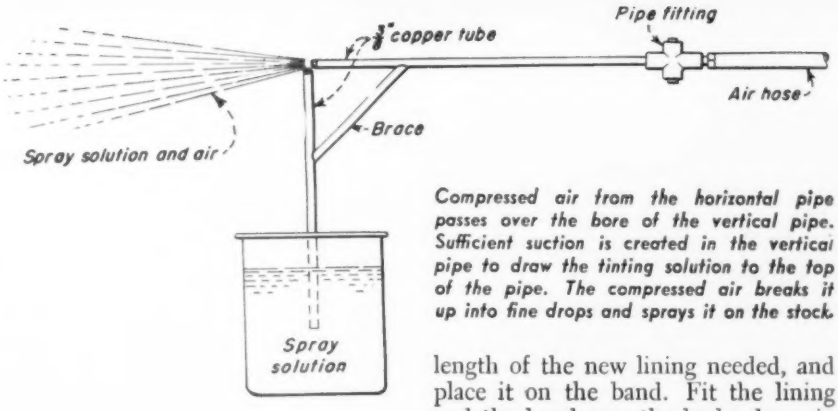
Spray Device for Tinting Made With Two Pipes

Many mills only occasionally run stock that needs spraying with an emulsion or tinting liquor, and some of them do not have a spraying system suitable for this job. If spraying equipment is not needed often enough to justify its purchase, or in case of an emergency, an effective spraying device can be made as shown in the accompanying sketch.

To make such a spray, connect a short length of ⅜-in. copper pipe to a flexible air hose. Weld a brace to the pipe at about a 45° angle, with the angle opening toward the unconnected end of the pipe. To the other end of this brace, weld another section of ⅜-in. copper pipe so that it is perpendicular to the first section and the adjacent ends of the two pieces of pipe are almost touching.

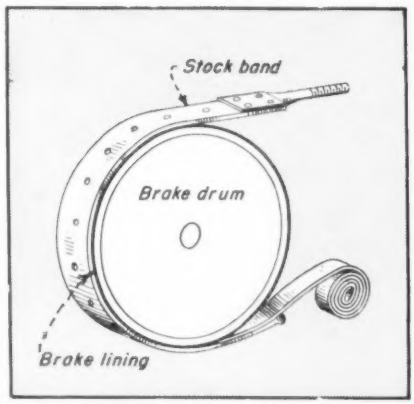
Secure a suitable container for the spray solution, and insert the lower end of the upright section of pipe into the liquid. When the air is turned on in the compressed-air hose, air blowing through the horizontal section of pipe will create sufficient suction in the vertical pipe to bring the liquid up the pipe. When the liquid reaches the top of the pipe and is acted upon by the flow of compressed air, it will be blown onto the stock to be tinted.

The amount of solution sprayed can be regulated by adjusting the air pressure through the horizontal pipe. (K-672)



Compressed air from the horizontal pipe passes over the bore of the vertical pipe. Sufficient suction is created in the vertical pipe to draw the tinting solution to the top of the pipe. The compressed air breaks it up into fine drops and sprays it on the stock.

Rivet Brake Linings At Proper Points



Better results can be obtained from new leather brake linings on looms if the linings are fitted properly to the brake band and drum. Place the new lining over the drum, hold it tightly in place with the band, and mark the points for riveting with a punch.

Relining a brake band on a loom often gives a fixer trouble. To secure an exact fit of the leather lining on the brake drum, the points for riveting the lining to the outside steel band should be measured while the lining is on the drum. A good fit can be obtained in the following manner:

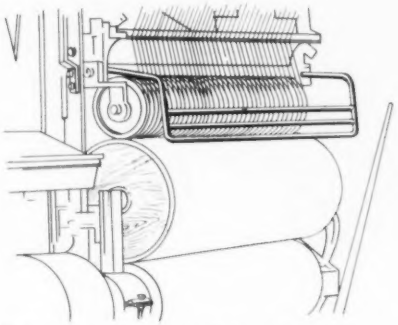
Remove the worn lining from the steel band. Cut the approximate length of the new lining needed, and place it on the band. Fit the lining and the band over the brake drum in approximately their operating positions. With the band pulled tight, mark the leather through the rivet holes with a punch.

Now remove the band and the lining, cut the lining to the exact length needed, and rivet the lining to the band at the points marked with the punch. Linings that are fitted in this manner work smoothly and last longer than ill-fitting linings. (K-677)

Guard on Waste-Yarn Spooler Protects Hand

In unwinding used bobbins of warp yarn and rewinding the yarn on a high-speed compressing spooler, operators stand with their backs to the spooler and draw the waste yarn from the bobbins with long backward movements of their right arms. This operation is preparatory to starting new ends on the spooler and is done while the spooler is running.

The ends that are running are drawn through a bar of guide eyelets, over a tension roll, through another bar of eyelets, over a steel pressure roll, and onto the spool. The height of the pressure roll and take-up spool is such that it is quite easy for an operator to get her hand caught between them. Occasionally, an operator



This guard, made of ⅜-in. steel rod, was placed in front of the bite of the pressure roll and take-up spool on a high-speed compressing spooler to prevent the operator's hand from being caught between the rolls.

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WRIGHT HIBBARD HIGH LIFT TRUCK

KINKS & SHORT-CUTS

(Continued from page 156)

misjudges the working area between her back and the machine and thrusts her hand or several ends of unwound yarn between the pressure roll and spool. Since the pressure roll is grooved, such an accident can cause serious injury to the operator's hand.

I made the guard shown in the accompanying illustration to prevent accidents from this cause.

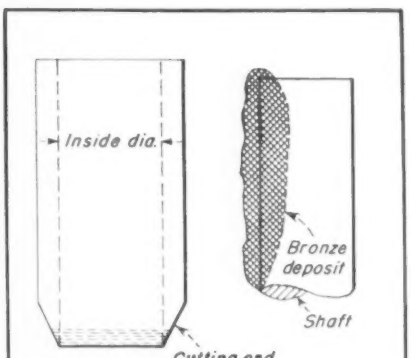
The guard consists of three $\frac{3}{8}$-in. rods placed horizontally across the spooler directly in front of the bite of the pressure roll and the take-up spool. The rods are supported by arms fastened on pivots to each side of the machine housing. The pivot fastenings permit the arms to raise and lower with the steel pressure roll, in response to the diameter of yarn on the spool. This arrangement ensures that at all times the guard will be in its proper place as regards the bite of the two rolls.

In addition to protecting the operator's hands, the guard also prevents clothing from being caught by the rolls if the operator should stand too close to the machine. *(K-662) Manley Titus, Lima, Ohio.*

Length of Pipe Shapes Bronze Deposit

Shafts, axles, etc. that do not require precision fitting to bearings can be built up with bronze and rapidly shaped for service with a tool similar to the one shown in the accompanying sketch.

The tool is made from a length of steel tubing or pipe very slightly larger than the shaft that is to be built up. One end of the pipe should be beveled off so that the circumference of the pipe at the inside forms a cutting edge. The other end of the pipe is cut squarely off to present a driving surface. If the pipe is of fairly soft metal, it should be hardened.



This shaping tool, made of slightly over-size pipe, can be used for shaping hot bronze deposits on a built-up shaft or axle that does not require precision fitting to a bearing. Drive the cutting end of the tool over the hot deposit and remove the tool.

To use the tool, build up the worn section of the shaft with an excessive deposit of bronze. Insert the cutting end of the shaping tool over the end of the shaft nearest the deposit. Drive the tool up on the shaft until it is almost touching the bronze. Reheat the deposit until the bronze is almost to the melting point, and drive the forming tool farther up on the shaft until the deposit is completely covered by the pipe.

If the tool sticks, allow it to stand a moment to absorb sufficient heat from the shaft to expand. It can then be easily removed. Cool the tool thoroughly in water before using it again. *(K-651) The Linde Air Products Co., New York, N. Y.*

Stitch-Adjusting Screw For Coarse-Gage Ribbers

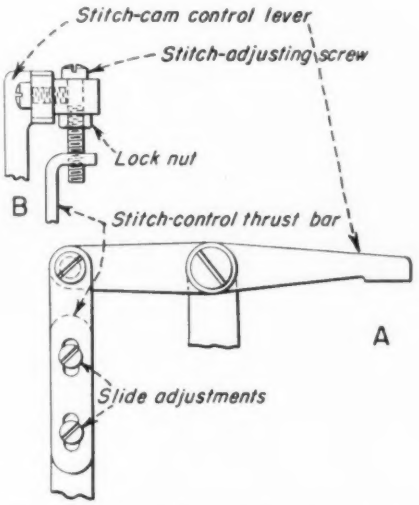
We have a number of coarse-gage knitting machines that we secured during the war to knit heavy socks for the Army. Considerable width and elasticity were required in the cuffs of these sox; and to obtain them, it was necessary to depress the stitch cams for the rib knitting.

Setting the stitch correctly with the sliding joint, shown in *A* in the accompanying sketch, proved to be a difficult job. We changed over from the slide adjustment to the screw adjustment shown in *B*, and found that we could set the stitch correctly.

The change was made as follows: The upper end of the stitch-control thrust bar was heated, and $\frac{1}{2}$ in. of the end was bent to a 90° angle. A screw with a 10-32 thread was to be screwed into the hole in the bent end of the thrust bar and used for adjusting the stitch. Before inserting the screw, a collar was made so that the stitch-adjusting screw could be held in a position constant to that of the control lever.

This collar was made with a No. 10 bore and an outside diameter of $\frac{5}{8}$ in. One side of the collar was squared off to a depth of $\frac{1}{16}$ in. so that it would fit flush against the side of the control lever. In the center of the squared section, a hole was tapped out so that the threaded end of the horizontal screw placed through the control lever would extend into the hole in the collar. A paper shim about 0.01 in. in thickness was held between the collar and the control lever while the hole was tapped in the collar. This shim was used in order to assure 0.01-in. clearance between the lever and the collar so that the collar could have a slight rocking action on the end of the horizontal screw.

To assemble the screw-adjustment arrangement, we inserted the stitch-adjusting screw through the collar and screwed a lock nut up the screw beneath the collar. The screw was then placed in the hole in the bent end of the stitch-control thrust bar.



Stitch adjustments for variations in yarn can be more accurately made on a coarse-gage ribbing machine by changing over from the standard slide adjustments of the thrust bar to the screw adjustment shown here. The horizontal screw, which extends through the stitch-cam control lever, enters the side of the collar and holds the stitch-adjusting screw in place. By loosening the lock nut below the collar, the bent thrust bar can be raised or lowered by the adjusting screw. Accurate adjustments can be made in this manner; and when the lock nut is tightened, the adjustment is securely held.

With the hole in the side of the collar lined up with the screw hole in the control lever, we tightened the horizontal screw until it was tight against the outside of the control lever. This action placed the end of the horizontal screw in the hole in the collar.

With the lock nut loose, the stitch-adjusting screw was run up or down in the thrust bar to adjust the stitch according to the yarn being used. When the correct adjustment was made, the lock nut was tightened. *(K-669) Walter A. Simond, Franklin, N. H.*

first to develop a corrugated OCTAGON box for bulk glassware

The OCTAGON Box, an advancement in packaging bulk glassware, was introduced by Hinde & Dauch. About half the size of the conventional unit, the H & D OCTAGON is easier to pack and unpack, easier to handle, saves space and weight, reduces shipping costs. In addition to these important features, this attractive package also carries an effective advertising message and trade name design. Most of these advantages have been available to manufacturers in other lines since the advent of PREPAK*, DUPLEX, SELMOR* and many other H & D corrugated packaging "firsts" . . . advancements that have saved thousands of dollars through lower packaging and shipping costs, less damage in transit, and decreased distribution and sales costs. The Hinde & Dauch Paper Co., 4705 Decatur St., Sandusky, Ohio.

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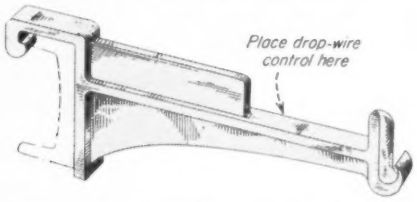
KINKS & SHORT-CUTS

(Continued from page 158)

Drop-Wire Contact Bars Should Be Kept Off Floor



Damage to the insulation on the drop-wire contact bars of an electric warp stop motion can be prevented and short circuits avoided by using two of these brackets to hold the bars while warps are being changed. Place the large end of the bracket on the arch of the loom, and lay the contact bars in the 3-in. recess near the small end of the bracket.

When a warp is woven out and the drop-wire contact bars of the electric warp stop motion are removed, the bars must be protected from damage in order to prevent a short circuit developing when the bars are put back in operation. If damage occurs and a short circuit develops, the bars are worthless and must be replaced.

These bars consist of a partial outside metal cover that is not wired to the electric knock-off and an inside metal bar that is wired to the knock-off. When a warp thread breaks, permitting a drop wire to fall, one side of the metal drop wire comes into contact with the inside bar of the drop-wire contact bar through the opening in the outside cover. This contact completes the electrical circuit, and the loom is stopped.

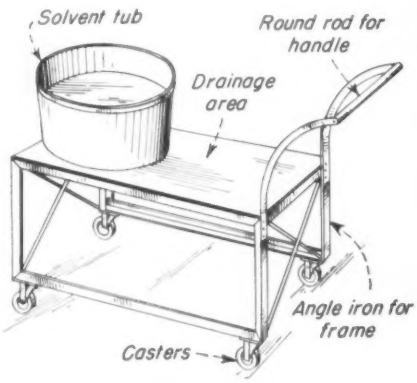
Between the outside cover and the inside contact bar, there is a thin strip of fiber insulation. If the bars are dropped on the floor and permitted to remain there while a new warp is being placed on the loom, the fiber insulation is likely to be broken by a truck running over the bar, a beam being dropped on it, etc.

Some provision should be made for keeping these bars out of the way so that they will not be damaged. Two simple brackets, similar to the one shown in the accompanying illustration, will serve this purpose. The bracket shown should be cast; and since two brackets would be needed for each loom equipped with an electric warp stop motion, casting would be the quickest and least expensive method of making them. However, they could also be made in the mill's machine shop, or even in the carpenter shop, if it should be preferable to make them of wood.

When two of these brackets are placed on the arch of a loom and a warp weaves out, the drop-wire contact bars can be removed from the loom and placed on the brackets. Thus, the bars will be out of the way and the insulation will not be damaged. The bars will also be convenient when the weaver, or other operator, starts to place them on the new warp. *(K-664)*

Movable Worktable Is Convenient for Fixers

Fixers and overhaulers, in the weave room or other departments, frequently must wash machine parts in a cleaning solvent in order to remove films or heavy deposits of grease, oil, and dirt. A movable unit, shown in the accompanying sketch, is useful for holding the rinse bucket and for providing a drain area. The use of such a unit not only is convenient, but it is also an aid to housekeeping.



A movable worktable such as this is convenient for use by fixers and overhaulers in washing machine parts. The vacant area of the table can be covered with waste and used for a drainage area.

Angle iron can be used to make the frame of the rinse buggy. Mount the frame on casters, and bolt or weld a piece of sheet metal over the top of the frame to serve as a worktable.

When parts—such as the parts of a dobby head—are removed from the loom, drop them into the bucket of solvent on the buggy. When the parts have been washed and removed from the rinse, place them on a piece of waste cloth on the empty section of the worktable to drain. *(K-674)*

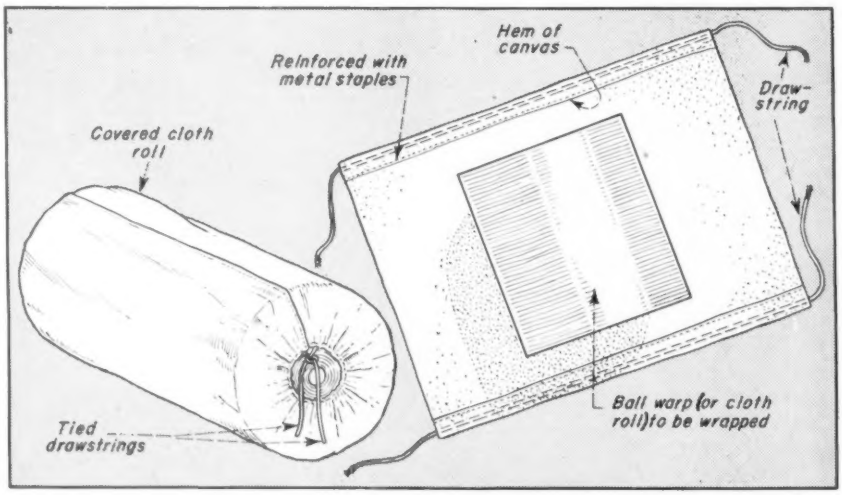
Ball Warps and Cloth Rolls Protected With Canvas

Ball warps and cloth rolls that must be transferred from one place to another in the plant need to be protected against dirt, blows, or surface friction that might damage them. We use a canvas cover, shown in the accompanying sketch, for this purpose.

A piece of 5-harness sateen (tent twill) is cut to the proper dimensions and seamed so that a drawstring can be inserted at each side. This canvas should be sufficiently wide for the ends of the roll to be well covered.

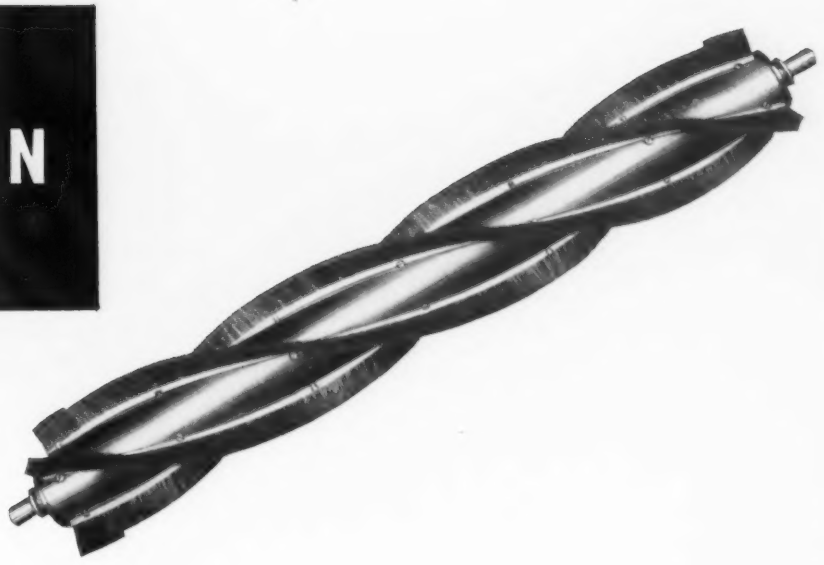
To wrap a ball warp or cloth roll in the canvas, stretch the canvas out flat on the floor or table and place the ball or roll in the middle of the canvas, as shown in the sketch. Tighten the drawstrings on each side and tie them securely.

We have been using these covers for several years and have found them quite satisfactory. *(K-660)* R. V. May, Sylacauga, Ala.



Ball warps or cloth rolls can be amply protected during transfers within the plant by canvas covers similar to the one shown here. The cover should be wide enough for the sides to cover the ends of the rolls when the drawstrings are drawn tight and tied.

AVOID SHUTDOWN DELAYS



WHEN REFILLING BRUSHES FOR CLEANING REVOLVING FLATS ON COTTON CARDS

Your own men can refill these flat brushes when you fit them with Fullergript brush strips. After your maintenance department places anchor screws in the cores, even machine operators can replace the brush strips.

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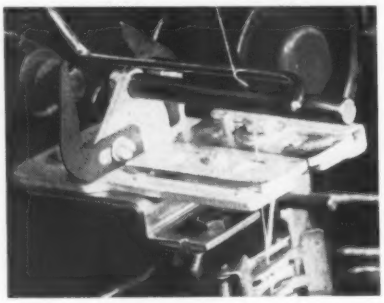
Here's the most familiar "shape" in the synthetic filament yarn industry — the Universal Precision Cone, flat-based, compact, uniformly wound.

Mills who buy synthetic filament yarn on cones know that the Universal Cone is uniform in density, contains yarn that has been carefully inspected, and will deliver freely without plucks or dragging over the nose end.

Synthetic yarn manufacturers prefer it, too, because the No. 50 Precision Winding Machine makes it easy and economical to produce the quality packages that the market wants; and, it is the ideal shipping container, for it contains a maximum amount of yarn and will withstand rough handling.

A Universal Feature Contributing to Cone Quality

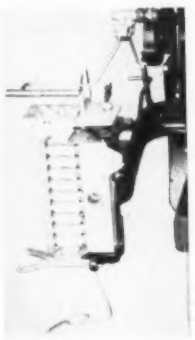
Precision Cleaner is set uniformly from spindle to spindle without depending upon judgment of operator. It is



firmly locked — with blades parallel — against vibration and tampering. All yarn, has same degree of inspection.

A Universal Feature Contributing to Economical Winding

Anti-Wear Tension traverses yarn between fingers in unison with traverse guide, thus distributing wear over a wide surface and lengthening the life of the tension. Case-hardening, double-polishing, hard chromium-plating, inspection with optical instruments, guarantee longest possible service.



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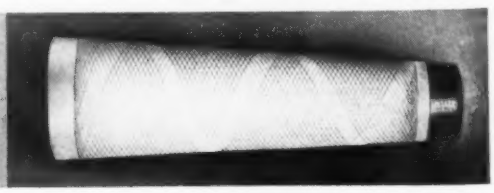
MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES IS PRECISE-WOUND ON THE FLEXIBLE 50.



Round Table

FOR EXCHANGE OF IDEAS

The Round Table is designed to supply a meeting place where mill men can discuss problems among themselves. It is open to all readers for discussion of subjects relating to mill management and operation. Names of contributors to the Round Table will be held confidential if so requested, but sign contributions with your real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table, Textile World, 330 West 42nd St., New York 18, N. Y.

Use Old Shuttles To Break In New Looms

When new looms are ready to be started up, the practice generally followed is to put new shuttles in the looms and run the looms without warps for several days. This breaking-in period is necessary in order to find faults that cause the looms to slam off. These faults are then corrected so that little trouble in weaving will be encountered after warps have been placed in the looms.

Old shuttles can be used for breaking in the looms, and the cost of many shuttles may be saved. Harsh picking and poor checking of the looms during this adjustment period frequently loosen shuttle points. Looms slamming off often will throw shuttles off the races and break or damage the shuttles. Since the loom adjustments can be made as well with an old shuttle as a new one, it is a waste to use new ones. *(R-341)*

Fair Isle Knitwear Still Popular in Britain

The popularity in Great Britain of Fair Isle knitwear, both hand and machine knitted, is continuing. This style of knitting, which originated in the Shetland Islands, features multicolored patterns; and the fabrics are used mainly for such children's garments as pull-over sweaters and berets.

These patterns became popular during the war when it was difficult to obtain hand-knitting yarns and particularly difficult to match colors of yarns. The unorthodox patterns of Fair Isle knitwear made it possible to use any odd lengths of wool. *(R-342)*

"Tumble-Twist" Rug Is Covered by Patents

We were interested in article No. 9164 that appeared in your Questions & Answers department on page 156 of the April issue under the title "Draper Loom Unsuited For 'Tumble-Twist' Rug."

We should like to call to the attention of your readers the fact that the Tumble-Twist rug and also the loom used to produce it are covered by numerous patents and patents pending. *(R-344)*

Cotton Flow Chart Is Said To Be Invaluable

The cotton flow chart [Textile World, Jan. 147 issue] is an invaluable presentation of the flow of cotton fiber from the bale through the various manufacturing processes to the finished product. It is one of the significant contributions to textile literature that is occasionally forthcoming from the textile periodicals and publishers. *(R-340)*

Ball Bearings Need Careful Cleaning

Cleaning ball bearings should be done with special care. As soon as the bearings are removed, as during the overhauling period, they should be placed in a container of cleaning solvent that is free of contamination and lead compounds, according to instructions issued by The Fafnir Bearing Co.

If the bearings are filled with hardened grease or heavy oil sludge,

TEXTILE TICKLES . . . . . By Edgar Allen, Jr.

"I don't want to criticize your new dye-formula discovery, Parker, but doesn't it seem just a a mite too strong?"

they may be difficult to clean unless they are subjected to a thorough soaking previously to washing with the solvent. A good soaking solution can be made by heating light oil to 160 to 180° F.

When the bearings are placed in the container of solvent, they should be revolved by hand to remove dirt, chips, or solids that may be present. Compressed air that is entirely free of foreign matter or moisture may be useful in removing stubborn spots. If air is used, the rotating parts of the bearings should not be permitted to turn freely or to reverse themselves suddenly.

The bearings should be removed from the solvent and spun or rotated by hand in order to judge accurately of their condition. If practicable, they should be spun or rotated in new oil until the solvent has been completely removed.

After this inspection, the bearings should be lubricated and mounted or covered until ready for use.

Flow-Chart Assistance Belatedly Acknowledged

Jacquard Knitting Machine Co., Inc., of Philadelphia, Pa., was among those who assisted in compiling the Knitting Flow Chart which appeared in the April issue of TEXTILE WORLD; but inexplicably, its name was not included in the list that was printed on the flow chart. Jacquard Knitting Machine Co., Inc., through C. F. Miller, chief engineer, supplied photographs and checked the early drafts of this flow chart. Their assistance is appreciated—Ed.

Air Conditioning of Mills Requires Engineering Skill

The textile industry has always recognized the importance of temperature and humidity controls in the handling of textile materials. However, the introduction of new high-speed spindles and the relocation of motors from ceilings to working areas have brought about extreme local concentrations of heat that emphasize the problem of localized control of humidity.

Many of the seemingly new developments in the field of air conditioning are actually refined applications of known fundamentals; and engineering design, under present-day conditions, requires closer and closer tolerances. Thus, the effects of temperature and humidity upon materials are becoming more important.

For example, the process of opening and blending cotton fibers requires more stiffness in the fibers and can best be done at a relative humidity of 50%. The weaving process requires higher flexibility and strength in the fibers and should be done at a relative humidity of 70 to 90%. However, the relatively recent development of plastic textiles and new fabrics made of a mixture of natural and synthetic fibers of different hygroscopic characteristics has brought about new requirements in air conditioning in textile plants.

It is now necessary, therefore, that air-conditioning engineers know both the old and the new problems. The field of air conditioning is only beginning to open up, and engineering standards must be geared to industrial development. (R-338)

This material was abstracted from a recent talk by Capt. Alfred E. Stacey, Jr., of the Carrier Corp., before the American Society of Heating & Ventilating Engineers.

PRODUCTS & PROCESSES

New Detergent Is Efficient in Hard Water

AHCOVON T; Arnold, Hoffman & Co., Inc., Providence, R. I.

A new detergent recommended for general textile use in scouring, dyeing, and finishing and said to be efficient in hard water, acid, or alkali has been announced by Arnold, Hoffman & Co., Inc. Ahcovon T is a sulphonated petroleum derivative, reported to possess superior stability to lime and salts. It is light buff in color in dry flake form, and is relatively non-hygroscopic. A 1% solution has a pH of 7.3 to 7.8.

Printing Thickener Improves Color Yield

FLOTEX, National Starch Products, Inc., 270 Madison Ave., New York 16.

Flotex, a printing thickener designed to serve as a replacement and extender for natural-gum thickeners, such as gum tragacanth, alginates, and locust-bean gum, has been announced by National Starch Products, Inc.

Flotex is said to aid in production of textile prints having superior color yield as compared with those obtained from natural gums.

A colorless, clear-cooking starch derivative which gelatinizes to a heavy-bodied, smooth, non-jelling paste, Flotex is reputed to possess excellent stability in the presence of acids, alkalis, and other chemicals commonly used in textile printing. It has high viscostiy with low solids.

Because of its long-flowing, non-jelling properties, Flotex is said to have been found especially suitable for use with aniline, diphenyl, and logwood blacks, producing jet blacks with extremely sharp outlines.

Dyestuffs with which Flotex is reported to work well as a thickener include rapidogen, pharmasol, algosol, indigosol, naphthol, and chrome colors. Further uses of the material are indicated in white discharge and caustic plisse printing, and for application in gum rollers and peroxide padding, according to the manufacturer.

New Dyestuff for Wool Good for Cross-Dyeing

CHROMACYL ORANGE R; Dyestuffs Div., E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.

Designed to be particularly suitable for application to woolen and worsted piece goods and yarns, either in self shades or in combination, Chromacyl Orange R, announced by Dyestuffs Div. of Du Pont, is said to possess very good fastness to light and dry cleaning and to have good resistance to perspiration and pressing. The wash and other wet-fastness properties of the dye closely approach those of chrome colors, it is reported. It is also said to have very good fastness to carbonizing, dry and wet stoving, cold- and salt-water spotting, and to have good fastness to fulling and washing.

Dyeings can be made in all types of equipment, it is claimed, since brass, iron, and monel have negligible effect on the shade. In acid baths, Chromacyl Orange R has a slow, uniform exhaust, good transfer at the boil, and is not selective. Dyed neutral, cotton and viscose-process rayon effects are stained slightly. Nylon effect threads are dyed stronger than wool, while silk is dyed similar to wool.

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They have ranged from high-priced, good quality warp softeners, down to cheap compounds loaded up with water to make the price per pound look low. Even the cheap ones cost a lot more these days.

Then along came Houghton-Size CW, and it proved itself immediately. It gave excellent results in slashing and weaving, resulting in increased weave-room efficiency. For detailed proof, write

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Questions and Answers

Rib Knitting Machines Can Produce Flat Fabrics

Technical Editor:

What are the possibilities of knitting flat fabrics on latch-needle rib machines by removing all the needles from the dial? (9174)

It is possible to remove all the dial needles on a latch-needle rib machine and knit a flat fabric, but this procedure is not advisable for a production run. The cost of operation will be almost prohibitive, since this type of machine very often runs at a slower speed than a plain machine.

It would be difficult also to knit to gage, as there would be the problem of having the yarn fill the spaces between the needles. Another objection to this method of knitting flat fabric is the damage that would be done to the machine. If the dial needles were removed and the machine operated for a considerable period of time with only the cylinder needles, the operating parts of the machine would wear; and if the dial needles were again placed into operation on the machine, the knitter would find it extremely difficult to knit a uniform fabric.

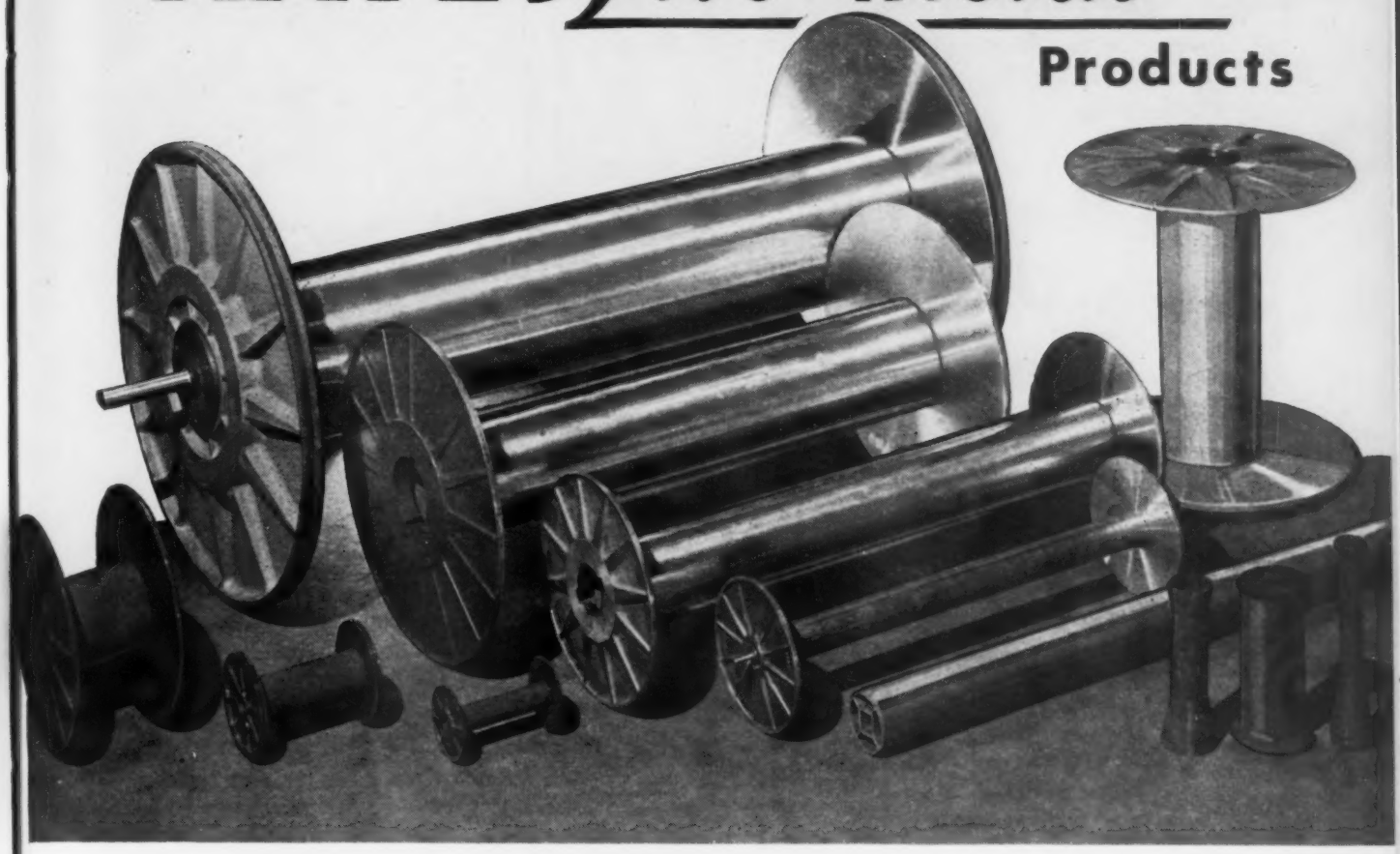
Gas-Fired Curing Ovens Do Not Cause Fading

Technical Editor:

Can you furnish me with information regarding gas-fired baking stoves as used in the United States for the curing of durable water repellents, synthetic resins, etc? Where do the products of combustion go? Are they circulated around inside the oven, along with the cloth? If so, do they cause trouble due to gas-fume fading?

There are three different types of curing ovens used in this country for durable water repellents and synthetic resins. In the first and oldest type, air is heated by being passed through high-pressure steam coils and is circulated within the curing chamber by means of fans. These ovens are of the

HAYES *lite-metal* Products



Speed up PRODUCTION *and reduce costs in textile mills*

The light weight—high strength characteristics of magnesium and aluminum plus the specialized equipment and "know-how" of the Hayes organization are combined in "LITE-METAL" warp beams, bobbins, cloth rolls, etc. Their lightness, accuracy and precise balance increase production rates and improve quality of product.

Perhaps your requirements can be met by one of the many standard products shown in the new Hayes catalogue. If not you will find Hayes engineers able and anxious to be of service.

HAYES INDUSTRIES, INC. Home Office: JACKSON, MICHIGAN, U. S. A.

★ *Accepted by the Textile and Dyestuff industry as the standard accelerated testing machines for determining the light fastness, weathering and washing qualities of materials.*

Weather-Ometer
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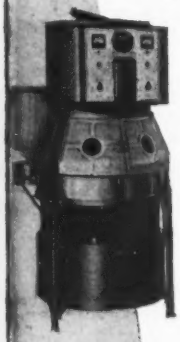
ATLAS *twin arc* WEATHER-OMETER

Faithfully duplicates the combined weathering effects of sunlight, rain, heavy dew and thermal shock; accelerated to reduce years of actual weathering to a few days of testing.

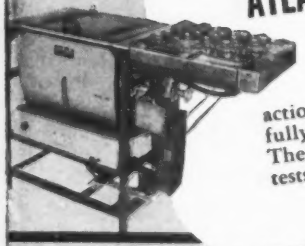
The new Twin-Arc Weather-Ometer is equipped to take large size textile specimens in order to meet the new Federal Specifications demanding accelerated weathering tests. Full automatic control of light and water periods is provided by the Atlas cycle timer unit which can be set to meet standard and special requirements of weathering tests. A direct reading thermal regulator, automatic shut-off switch and a running time meter are included as standard equipment. After setting exposure cycles on the control panel the Weather-Ometer can be safely left in continuous operation overnight without attention except to replace carbons once in 24 hours.

The Atlas Weather-Ometer proves the durability of materials under exact conditions of weathering found in actual use in outdoor exposure.



ATLAS FADE-OMETER

The recognized standard testing machine for determining the fastness to light of dyestuffs and dyed fabrics. Specimens are rotated around the Atlas Enclosed Violet Arc—the closest approach to natural sunlight—in masked holders. Automatic temperature control to within ±3° F. and humidity regulated by a constant reservoir according to requirements of tests. Operation is completely automatic without attention from operator; can be left in continuous operation overnight.



ATLAS LAUNDER-OMETER

The standard laboratory washing machine of A.A.T.C.C. for testing color fastness, staining, shrinking, resistance to washing and mechanical action. All factors including washing action can be carefully controlled and reproduced identically at any time. The new preheating loading table increases accuracy of tests by starting all samples at uniform temperature.

ATLAS ELECTRIC DEVICES CO.
361 West Superior Street, Chicago 10, Illinois
Originators and sole manufacturers of accelerated testing devices for over a quarter of a century.

loop or festoon type. In some of them, the cloth passes through the curing chamber over a series of rolls located at the top and bottom.

In the second type of oven, air is heated outside the oven, either by means of gas or oil, and drawn into the curing chamber. Sometimes the products of combustion are entered directly into the oven. This type of curing oven is known as an indirect-fired oven. Quite high temperatures are possible with it.

A third type has the gas or oil burners located within the oven itself, or the heated gases are injected from burners located immediately outside the oven. In these ovens, very little air is present. Both the direct- and indirect-fired types are capable of attaining temperatures of 400 to 500° F., though they are seldom operated at temperatures much over 400° F.

Adjustable dampers on exhaust stacks permit removal, at any desired rate, of decomposition products obtained in curing. Inside any of these ovens, the heated gases are directed on the cloth by means of ducts.

Trouble with gas-fume fading on fabrics so processed is practically nonexistent. The colors usually employed on this type of work are vats or sulphurs, although other types are sometimes used on resin-treated synthetics. A shade change nearly always results with any type of dye and must be allowed for in the dyeing. However, it seems more logical that this shade change is brought about by the chemical reactions taking place on the cloth itself than by the relatively inert combustion products that may be present in the curing chamber.

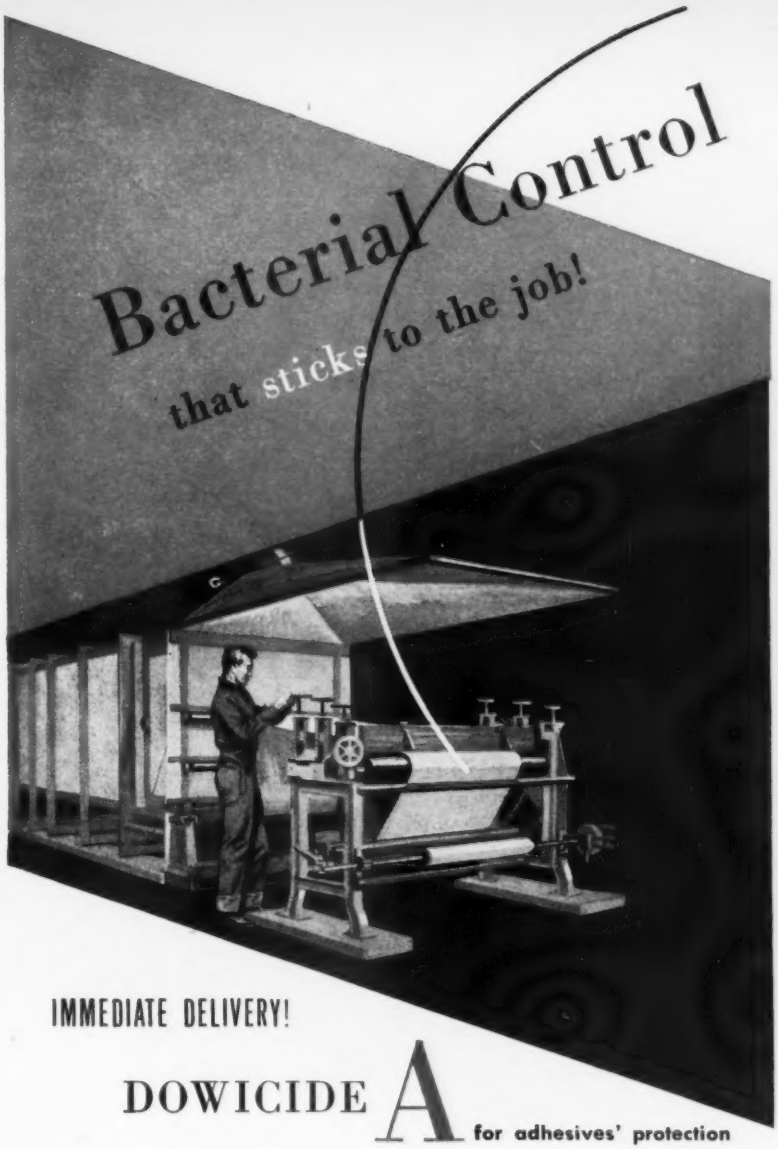
Pulled Threads in Hose Caused by Handling

Technical Editor:

We enclose a stocking on which we have marked a distortion. We are having considerable difficulty with this problem of holes or distortions, and we would like to know what is causing it. (9172)

The defect in the stocking is a pulled thread and was made in the stocking after the gray inspection.

Defective stockings found by the examiner should be sent to the mender in order that pulled threads can be held to a minimum for the finishing operation. If this defect is caused in the finishing operation, it is suggested that all rough places on tables, preboarding forms, boarding forms, and finishing tables be eliminated. In some cases, manufacturers



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In adhesives—in *any* industry that suffers from the constant working of microorganisms, you can gain effective control—and save money—by using Dowicides.

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Dowicide A, one of a group of 14 germicides and fungicides cutting losses in many industries, can be shipped *immediately*. Order from the nearest Dow sales office.

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CHEMICAL COMMENTS

Methocel Licks Important Problems in the Leather Industry

Coating the grain surface of chrome- and vegetable-tanned leathers with Methocel before they are pasted on frames for drying reduces shrinkage. The use of Methocel also gives added smoothness in grain, and results in a gain in surface area. Using either the 1500 or 4000 cps. types, thick pastes can be produced with a minimum amount of Methocel, making possible added economy, and easier removal from the hide since penetration is reduced. Addition of small amounts of glucose further assists in the removal of the Methocel from the dried leather.

Perchloroethylene Vapor-Cleans Metal Parts

Vapor degreasing with Perchloroethylene is an economical method of cleaning metal parts before assembly or in preparation for other operations. The parts to be cleaned are suspended above a bath of Perchloroethylene allowing the vapor to condense on the cold metal to dissolve grease and flush away lint and chips. Perchloroethylene is nonflammable, stable and has high solvency for oils, waxes and a majority of the die lubricants used in casting and stamping. It is also used in liquid phase operations and is especially adapted to cleaning metal preparatory to plating. Degreasing surfaces with this solvent prevents blistering and peeling of platings.

Jacketed Kettles that Cook with Dowtherm

Multipurpose kettles constructed for the laboratory or semiplant use Dowtherm, a heat transfer medium developed by Dow. Such kettles are built with the jacket bottom enlarged to accommodate a small quantity of water, Dowtherm E or Dowtherm A. This pool of liquid can be heated with electric or gas heat to provide vapor for heating the kettle. The unit is operable at temperatures ranging from 200° F. to 700° F., with corresponding pressures not exceeding 125 lb. per sq. in.

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also supply the workers with synthetic or cotton gloves and request them to to use hand lotion.

The handling between operations should be done by placing the bundles of hosiery in bags. This practice will probably decrease production somewhat, but it is an effective method for determining whether or not the pulled threads are caused by the workers or by rough sections on the tables or machinery. A further precaution is to place someone in charge of handling hosiery until this problem of pulled threads has been eliminated.

The appearance of the finished hose can be improved by placing the seam along the edge of the board during the boarding operation. The result will be a more-balanced and better-looking stocking for sale purposes. The seamer should not be in too much of a hurry to remove the stocking from the seaming machine but should allow it to continue on for aproximately one inch at the end of the seaming of the welt.

Cationic Softeners Work Well on Wool

Technical Editor:

Your article on cationic softeners on page 147 of the February issue of TEXTILE WORLD was interesting. I gather from the article that the softeners work efficiently on such fibers as viscose and acetate rayon and synthetic protein. I am wondering if it would be practicable to apply the softeners to wool. (9173)

Cationic softeners can be applied to wool. The chemical structure of these softeners is very similar to a basic dyestuff that has a relatively high affinity for the wool fiber.

When the softeners are used on wool, it is advisable to have no anionic materials—such as soaps, sulphonated oils, etc.—present. The precipitates of these materials are difficult to remove, and they may give the finisher considerable trouble.

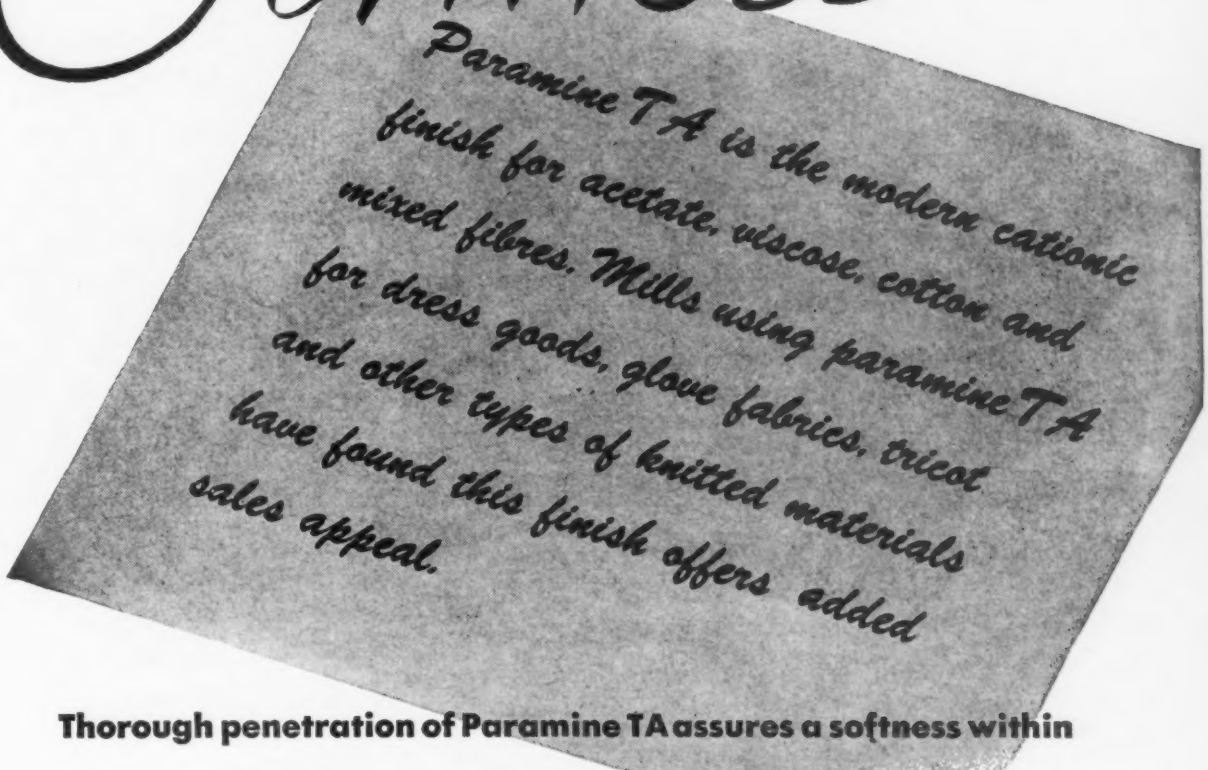
These anionic softeners are ordinarily used in large quantities to soften the rather stiff and brittle manufactured fibers, and they frequently impart too much surface oiliness and greasiness to the finish. Such softening agents have no durability and are removed from the fabric during the first laundering or dry cleaning; and the fabric is left, in many instances, harsh and with an unpleasant hand.

On wool, anionic softeners have much the same effect, though perhaps to a somewhat lesser degree, than on synthetic fibers.

Cationic softeners used in low concentrations have distinct advantages in giving maximum softness and a mini-

IF YOU WANT

DURABLE *Softness*


Paramine TA is the modern cationic finish for acetate, viscose, cotton and mixed fibres. Mills using paramine TA for dress goods, glove fabrics, tricot and other types of knitted materials have found this finish offers added sales appeal.

Thorough penetration of Paramine TA assures a softness within the yarn itself that gives materials a full hand and desirable drape—its substantive action produces a durable, lasting finish

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Use Paramine TA

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mum of oily or greasy hand. They are also relatively durable on both synthetic and wool fibers. On cotton, their durability to laundering and dry cleaning is good; but the hand is not apt to be so soft as that obtained from sulphonated oils unless rather large quantities are used.

Uses of pH Values Are Manifold

Technical Editor:

I am interested in knowing some of the various uses of pH control in textile dyeing and finishing. (0178)

1. Chemical analysis: It is desirable that the laboratory establish pH values of the many chemicals used by a finishing plant, in order to determine their compatibility with each other and their suitability in various operations and on various fabrics.

2. Water treatment: For plants that filter their own water, close pH control is necessary to ensure uniformity of operation, since such water may vary according to the season of the year and other conditions. Plants that floc-filter and finish their water must know the pH of the raw water in order to obtain proper coagulation and must adjust the finished water to a definite pH.

3. Boiler water: Practically all finishing plants use large quantities of steam. Control of the pH of boiler water within relatively narrow limits is a necessity for efficient operation and for the prevention of serious damage.

4. Bleaching: pH control of bleaching operations, especially when peroxide is used, ensures an efficient bleach and prevents waste of chemicals.

5. Dyeing: A number of dyes are sensitive to excessively acid or alkaline conditions. pH control of the dye bath will aid in securing maximum color value and more level dyeing.

6. Finishing: In cloth finishing, water repellents and many resins are sensitive to variations in pH; and it is necessary to see that the cloth is within the proper range before applying the finishes. The baths themselves must also be adjusted accordingly.

7. Synthetic fibers: Various synthetic fibers may be damaged by alkaline chemicals and are best prepared, dyed, and finished under acid, neutral, or mildly alkaline conditions. Since it is often necessary to carry these operations out on the alkaline side, determination of pH aids in controlling the exact alkalinity of the various solutions.

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ESTABLISHED 1870

THE TENNANT SYSTEM ENDS SCRUBBING and can be used throughout your mill

Terylene

(*Continued from page 123*)

low tenacity but with improved textile properties.

The filaments, which are, of course, parallel at this stage, are formed into yarns and receive an application, during the passage from spinneret to bobbin, of a suitable finishing liquid.

ORIENTING. On emerging from the spinneret, the long-chain molecules of the polymer lie in a random pattern and, except for those at the skin which have been partly oriented along the fiber axis, at all angles to it. Winding pulls more of the molecules parallel to the axis. And the next operation, hot or cold drawing, extends the fiber to many times its original length and correspondingly reduces its diameter. This reduction, which occurs at a random local point where the filament is sharply necked down, leaves the fiber truly elastic and possessing its maximum strength. Moreover, this drawing operation pulls a high proportion of the molecules parallel to the axis. They unite in crystallites which are themselves oriented along the fiber axis, a feature which imparts greater strength to the filament.

The degree of orientation of these crystallites can be measured by X-ray diffraction photographs, the rays being diffracted by the atomic planes in the crystallites and recorded on a photographic plate. The long-chain molecules, it is interesting to observe, tie the crystallites to one another; the molecules, which are much longer than the crystallites, wander at random from one crystallite to another. The degree of crystallinity considerably affects the strength and other properties of the fiber.

TEXTILE PROCESSES. After drawing, the yarns are plied and twisted to meet the buyer's yarn specifications. I.C.I. plans to produce "Terylene" not only as a continuous filament, low-twist yarn analogous to silk, but also as heavy industrial cords. By cutting the filaments into short lengths, staple can also be produced, from which fabrics can be produced on cotton and wool textile machinery. Because of its high resilience, Terylene can be expected to give a warm, lofty fabric.

Terylene resists light and heat much more than any organic fiber in current use, and also has a high resistance to moisture. It has a high modulus, which should make it easy to process. Very fine filaments, well below one denier per filament, have been produced. The material is also resistant to creep under load and is said to launder very easily.

Like other synthetic fibers, it is

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highly resistant to chemicals and to fungus and bacterial attack; but these properties also render it rather tricky to dye. While perfectly uniform and fast pastel shades can now be obtained, considerably more research will be required before dyed Terylene fabrics can be offered for sale generally. Very possibly, new dyes or dyeing techniques may be required.

In the meantime, because of its other exceptional properties, including its electrical-insulating qualities, Terylene can be expected to meet, in England, with a large demand for industrial purposes where dyeing is not required. For the purely industrial field, fibers of very high tenacity can be produced.

Uniform Yarns

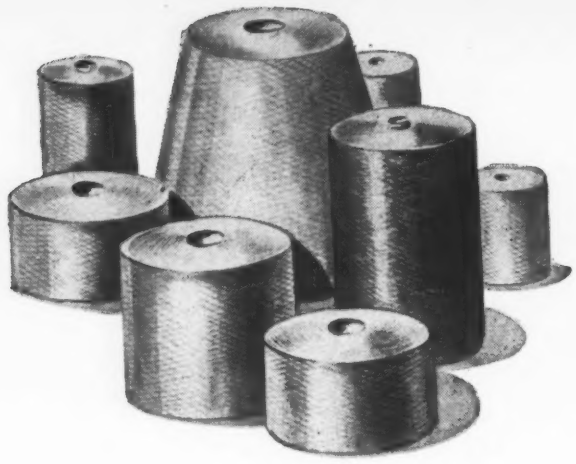
(*Continued from page 143*)

1900. Later years have brought several devices that are applicable to the card, such as the Firth stripper, the vacuum stripper, the continuous stripper, and, more recently, the drafting-roll assembly mounted at the front of the card in the approximate location of the calender rolls. While the card itself has not changed much, in recent years the outlook toward the operation of cards has changed considerably.

LIGHT SLIVER AIDS UNIFORMITY. Nowadays most mill men, except those who are sticklers for convention, favor a lighter 50- to 55-grain sliver rather than the heavy, 60- to 65-grain sliver that was common practice years ago. Lighter slivers increase the over-all draft of the card and are usually accompanied by slight increases in doffer speed. The practice is advantageous from several points of view. First, there are fewer fibers carried on the cylinder surface, thus increasing the cleaning action of the top flats. Second, the web is collected from a finer sheet distributed over a larger area, which tends to decrease variation. This fact is revealed by sliver-testing machine recordings which indicate conclusively that the variation found in short lengths of card sliver diminishes with weight. And, third, a lighter sliver plays an important role in the uniformity of the work produced at the drawing and roving frames.

Improved mill practice in stripping and waste removal are also observed at the card. Today, it is considered good practice to stagger the stripping cycle over every third or fourth card in order to reduce sliver unevenness.

Many mills look upon the waste removed at the card as a necessary evil, not realizing its effect on the uniformity of sliver weight from card to card,



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A NEW MODERN DYED YARN SERVICE

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Carl E. Bick, President

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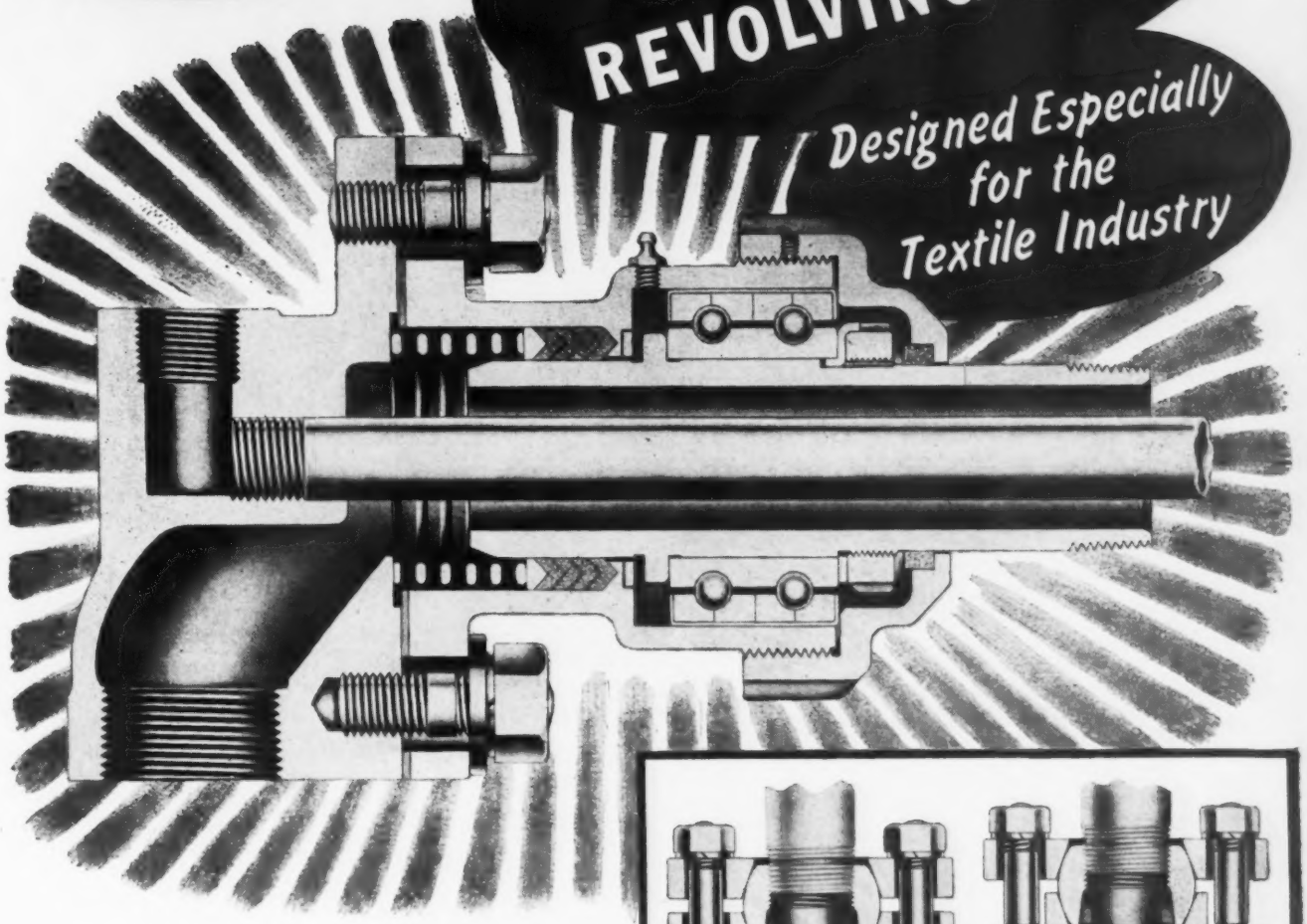
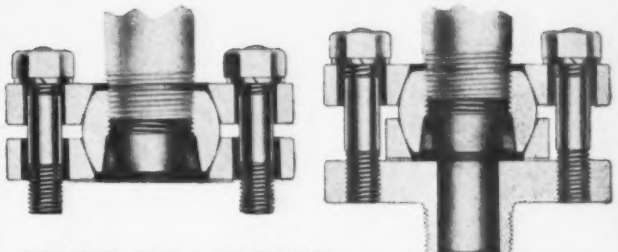
REDUCE MAINTENANCE OVERHEAD WITH THE BARCO REVOLVING JOINT

Designed Especially for the Textile Industry



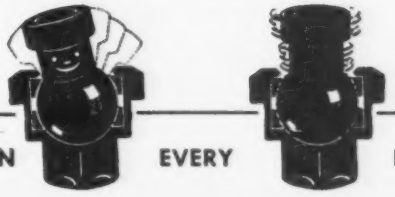
One way to eliminate a lot of maintenance worries and guard against steam leaks is to install this Barco Revolving Joint in slashers, dry cans, callenders and sanforizers. Barco reduces power costs because it has a lower turning torque. Installations in textile weaving and finishing plants or bleacheries have been particularly successful. Write for further information to Barco Manufacturing Co., Not Inc., 1834 Winnemac Avenue, Chicago 40, Ill.



BARCO BALL FLANGE—Cross-section view of Barco Ball Flange for use on threaded and flanged rolls for correcting roll misalignment. Sleeve can rotate concentric even though threads on roll are tapped off center.

BARCO FLEXIBLE JOINTS

Not just a swivel joint ...but a combination of a swivel and ball joint with rotary motion and responsive movement through every angle.



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Felt Washers
Fulling Mills
Garnetts
Indigo Dye Machines
Kicker Mills
Loop Dryers
Mattress Machinery
Metal Piece Dye Kettles
Metallic Rolls
Needle Looms
Neutralizing Bowls
Peroxide Bleach Kettles
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Sheet Metal and Duct Work
Shoddy Machinery
Soapers
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Squeeze Rolls
Tenter Frame Drying Systems
Tenter Frame Housings
Truck Dryers
Vacuum Extractors
Variable Speed Drivers
Willows
Wool Carbonizing Equipment
Wool Dryers
Wool Dusters
Wool Openers
Wool Washers
Yarn Dryers

MANUFACTURERS' BULLETINS

***READERS** may secure copies of literature reviewed on these pages by using the post cards below. Fill out **COMPLETELY** one coupon for each piece wanted.*

1. Model MJ circular knitting machine operator's manual has been published by Supreme Knitting Machine Co., Inc. The manual describes in detail the functions, characteristics, machine installation, cleaning, lubrication, and machine adjustments; it also contains yarn and trouble charts and should be valuable to fixers and operators since it covers stitch adjustment, possible troubles, and their remedies.

2. "Rivnut Data Book," published by the B. F. Goodrich Co., gives a general description of Rivnuts with details of their construction, types, sizes, head styles, grip range; gives data on selecting proper Rivnuts for various applications; describes methods for preparing holes, installing, and removing Rivnuts; describes keyseater tool; and gives examples of typical Rivnut uses.

3. Venetian blinds and wood-splint shades for commercial and industrial applications are described in two folders published by Hough Shade Corp. The folder describing wood-splint shades illustrates the way in which they may be fitted to the various parts of the windows, and describes their advantages in controlling glare and other light conditions in working areas. The second folder contains samples of wood slats and fabric tapes in various colors to give a variety of color schemes and combinations.

4. DC Antifoam A, a silicone compound for killing foam in aqueous systems, is described in a 4-page folder published by Dow Corning Corp. The folder describes the material, gives physical properties, tells how to use the compound, and describes its advantages.

5. Flexite rubber pouring buckets and dippers for use in handling acids, corrosives, and other highly active liquids are described in a 4-page catalog section, No. 9425, published by B. F. Goodrich Co. The range of applications and instructions on usage are included in the catalog section.

6. Thermoswitch catalog has been published by Fenwal, Inc. Designed to be a basic handbook of thermal procedure and containing illustrations and specifications of thermoswitch equipment, the catalog is expected to be of interest to all engineers concerned with temperature regulation and control.

7. Model MJ circular knitting machine parts catalog, a 30-page book giving name, number, and photograph of all parts of Supreme Model MJ knitting machines has been published by Supreme Knitting Machine Co.

8. Tractor-excavator with a bucket capacity of 1¼ or 1½ cu. yd. rated capacity is described in a 2-page folder published by Trackson Co.

9. "Speed" is the title of an illustrated 12-page booklet published by Air Express Div., Railway Express Agency, Inc. The booklet contains useful information for the speedy movement of shipments by means of a nation-wide air express service.

10. Permanent magnet separators for use in removing tramp iron and steel from materials in process are described and illustrated in two folders published by Homer Mfg. Co., Inc. The folders describe many types of installations, outline many uses and advantages, and present a table of sizes for various types of installation.

11. Use of rayon staple in woolen and worsted industries is the subject of Bulletin No. 2124 published by American Viscose Corp. Advantages of rayon staple, run either 100 percent or blended, are described.

12. Personal service facilities for industrial plants, including washrooms, locker rooms, recreation rooms, supply closets, lounges, and equipment and fixtures, are described in a 24-page booklet, Form 1234, published by Scott Paper Co.

13. Industrial dust problems and typical applications of air filters to such problems are described in a new 23-page illustrated booklet issued by American Air Filter Co. In the booklet is a chart of size and characteristics of air-borne solids; and sections of the literature deal with atmospheric dust, filtered air for industrial air conditioning, industrial ventilation, drying operations, product finishing, control of bacteria and mold spores, cooling electrical equipment, engines, and compressors, and miscellaneous industrial applications.

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TEXTILE WORLD
330 West 42nd St.
New York 18, N. Y.

McGraw-Hill Publishing Co., Inc.

14. "The Story of Aluminum Ladders" is the title of a 12-page booklet published by Aluminum Ladder Co. The booklet describes the advantages of aluminum ladders and enumerates a number of the applications to which they have been put.

15. Zeolite water softeners and demineralizers are described in 8-page Bulletin 5 published by Liquid Conditioning Corp. The bulletin outlines the applications, principles of operation, and equipment used in numerous applications utilizing this method of water treatment and is illustrated by flow diagrams and drawing of the equipment used.

16. Materials-handling machines, both gas and battery powered, are described in a 36-page catalog published by Tructractor Division of Clark Equipment Co. In addition to the specifications of the familiar models of the fork-lift trucks, the catalog introduces pneumatic-tired fork trucks, and illustrates a wide variety of handling attachments for use on fork trucks, including the newly developed "Pul-Pac" for unit loads without pallets.

17. Three-element feed water control is the subject of Bulletin 105-B, published by Bailey Meter Co. The bulletin lists a number of advantages of the 3-element system, shows chart records illustrating operation under difficult conditions, and gives a list of users.

18. Water-repellent treatment for concrete and masonry walls is described in a 4-page folder issued by Building Products Div., L. Sonneborn Sons, Inc. The folder explains how Hydrocide Colorless helps to preserve the original appearance of building exteriors by checking the absorption of dust, soot, and dirt into the surface of concrete and masonry walls.

19. "The Chemistry of Fatty Acids" is the title of a 12-page booklet issued by Armour & Co. The booklet, well illustrated, describes the various types of fatty acids and outlines their reactions to other types of chemicals.

20. Precision lathes are described in Catalog 13-F, published by South Bend Lathe Works. The catalog describes and illustrates 13-in. quick-change-gear and toolroom lathes, attachments, and adjustments.

21. Escalators for industrial and commercial establishments are described in a 20-page booklet published by Otis Elevator Co. Written for prospective owners of escalators, the booklet gives photographs, drawings, and explanations of the driving mechanism and running gear; presents photographs showing installations; and devotes several pages to location, maintenance, and safety of the escalators.

22. Treatment of water, purification of process liquids, and recovery of valuable substances from waste liquids are described in an illustrated catalog published by Liquid Conditioning Corp. The catalog outlines many different types of units for removal of air and other gases, sediment and other suspended impurities, hardness and alkalinity, and other dissolved impurities such as iron and silicon from water.

23. Permaproof treating compounds for flame-, water-, and mildewproofing fabrics are described in a 4-page folder published by B. F. Goodrich Co. Featured by swatches of both untreated and treated fabrics, plain and in colors, the folder describes tests used to prove the flame-, water-, and mildewproofing ability of the material, outlines its advantages, and discusses the way in which it withstands weathering, laundering, and dry cleaning.

24. Heating, ventilating, and air-conditioning equipment for commercial and industrial uses is described in 12-page Bulletin No. 25B6183, published by Allis-Chalmers Mfg. Co. Equipment portrayed and described includes Texrope V-belt drives, centrifugal pumps, a.c. and d.c. motors, a complete line of motor controls, dry-type transformers, and a.c. and d.c. welders.

25. Air compressors for pressures up to 250 p.s.i. and in sizes from one to 15 hp. are described in a 4-page folder, Bulletin H-620-B26, issued by Worthington Pump & Machinery Corp. The folder gives tables of capacities and ratings, data on standard and optional equipment, specifications, and a table of weights and dimensions.

26. Recording, controlling, and indicating instruments for industrial processes are catalogued in Bulletin W1811, published by The Bristol Co., with over 150 different items maintained in stock for immediate delivery.

27. The Guillet overhauling system for spinning frames, roving frames, twisters, and winders is described in a 16-page booklet published by Dixie Spindle & Flyer Co. The illustrated booklet outlines special overhauling problems, describes the equipment needed for satisfactory overhauling, and describes the overhauling procedure for various machines.

28. Thread guides of synthetic sapphire, ruby, and spinel are described in a 28-page booklet published by Linde Air Products Co. The booklet describes the physical and chemical properties of the material which combine smoothness, hardness, and homogeneity to provide exceptional qualities of strength and wear resistance.

29. Corrosion resistance through metallizing is the theme of the April, 1947, issue of METCO News, published by Metallizing Engineering Co.

30. Hot-process water softeners for removal of hardness, corrosive gases, silica, and other scale-forming materials from boiler-feed and industrial-process waters are described in a 68-page bulletin published by Cochrane Corp. The book contains a nine-page appendix of feedwater chemistry in addition to heat balances, flow diagrams, construction drawings of deaerating and non-deaerating softeners, and engineering tables and charts.

TO GET MORE INFORMATION

1. Fill out completely one space (name, title, company, address, and item number) for *each* bulletin wanted. Put only one number in each square.

2. Use only bottom card if ordering one to four pieces, both cards if ordering five to eight.

3. Detach, add postage, and mail.

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My Name William L. Wilson

Title Overseer

Mill Clearview Mills, Inc.

Street 1430 So. Main St.

City Clearview State N. C.

TEXTILE WORLD, New York 18, N. Y.

Post Card

Place 1c stamp here

TEXTILE WORLD
330 West 42nd St.
New York 18, N. Y.

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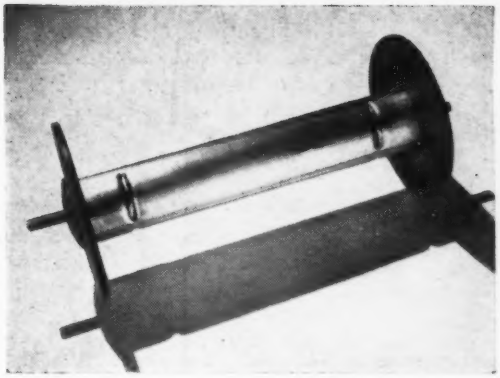
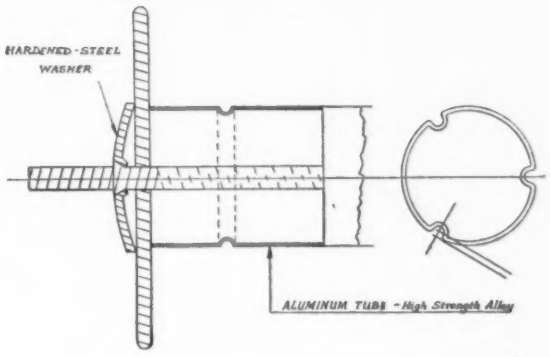


MUCH STRONGER

MUCH LIGHTER



Yes, *Newly Engineered!*

The new Lestershire Jack or Dresser Spool, made of high-strength alloyed aluminum tubing, reaches a new high in engineering features.

Here are a few of the features . . . geared to today's modern textile picture:

It is a *lighter, stronger* spool, made with *three* "slasher grooves" (and not just one) in the aluminum barrel. This serves not only as an extra ready means for cutting off the yarn, but also strengthens the barrel longitudinally and horizontally.

It offers far more strength against bending and denting, made possible by the new patent-applied-for barrel.

Further, it reduces yarn slippage. The spool is lighter than wooden spools and, of course, cannot be damaged as can a wooden spool when the yarn is cut off.

TODAY—SEND US YOUR SPECIFICATIONS FOR A *FREE* SAMPLE!

OTHER ADVANTAGES

★ Triple slasher grooved barrels are practically indestructible.

★ Rust proof and slip resistant.

★ Constructed with durable fibre heads and reinforced with hardened steel washers (see working sketch above).

★ Position of slasher grooves marked on inside each head.

PRECISION SPECIAL PURPOSE BOBBINS

W. S. TAYLOR, INC., 52 Vanderbilt Avenue, New York 17, N. Y.

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53% More Fire-Fighting Power

with the NEW Ansul-Dugas Dry Chemical Fire Extinguisher

Engineered to provide 53% more and faster fire-stopping power, the NEW Ansul-Dugas Fire Extinguisher is ready to use—IN A FLASH—on Class B and C fires. The wide heat-shielding stream of Ansul Plus-Fifty Dry Chemical from the specially designed nozzle makes extinguishing more certain even by inexperienced employees.

STOP FIRE FASTER!

HERE ARE OTHER PLUS FEATURES

- Quicker, easier, on-the-spot recharge right after use.
- Highest Rating for SPEED and EFFECTIVENESS as determined by impartial authority.*
- New, wider coverage type nozzle with long range effectiveness.
- Greater fire-fighting power pound for pound, dollar for dollar.
- Increased fire-fighting capacity without increased weight.
- Engineered to resist corrosion.
- Ansul Plus-Fifty Dry Chemical is non-toxic, non-abrasive, non-corrosive.

*Write for charts based on authoritative data of comparative ratings as determined by a national approval agency.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN

or its cost in dollars and cents. It has been stated that the variation in the amount of waste taken from cards accounts for approximately 5% of the variation found in sliver weight from card to card. It is believed that this variation can be reduced by approximately one-half, and an appreciable saving made.

DRAWING ROLLS CHANGED. The drawing used in the conventional organization consisted of two processes of four-roll drawing equipped with metallic rolls. There are many modern mills that still employ two processes of four-roll drawing, on which the rolls have been changed to fluted bottom rolls with synthetic- or cork-covered top rolls. While metallic rolls will produce somewhat more than the fluted type of rolls at a given rpm., metallic rolls are a constant source of bad work. The periodic wearing down of the necks causes an end of the top roll to seat deeper in the flutes of the bottom roll and results in uneven drafting. This fault is observed by the sagging down of the selvages of the sliver as it passes between the front roll and the trumpet.

LAP-BACK DRAWING. While many of our modern mills continue to use two processes of four-roll drawing, others consider the lap-winder and five-roll drawing-frame combination a little more up-to-date.

From the mill man's point of view, both of these systems are on a par provided proper precautionary measures are employed with both. The days of the heavy 60- and 65-grain sliver, except for mop yarns, are over. It is now realized that light drawing slivers, 50 to 55 grains, are essential to the manufacture of good yarns even though it is necessary, in many instances, to operate the drawing frames at a high speed to obtain these lighter weights. The high speed is, by all means, the lesser of the two evils.

SINGLE-PROCESS ROVING FRAMES. The conventional roving consisted mostly of three processes, namely 12 x 6 or 11 x 5½ slubbers, 10 x 5 or 9 x 4½ intermediates, and 8 x 4 or 7 x 3½ fly frames. The roving produced at the slubbers was doubled on the intermediates, and the intermediate roving was doubled on the fly-frames. In the majority of cases, the fly-frame roving was doubled in the spinning-frame creels, but there were a few manufacturers who used three-process roving creeled single in the spinning.

Today, the single-process roving frame is considered standard equipment for any modern mill. These

are you being STOOD-UP, too?

THERE'S no profit in promises. The much-used phrases "Please be patient" and "If your dealer doesn't have it, keep asking" have had their day. People now want products instead of promises. They want goods they can use *now*—not months hence.

Furthermore, they're beginning to have their wants satisfied. Some manufacturers are overcoming production obstacles, getting their products to market, and winning new customers whose loyalty to favorite brands is wearing thin. Are you letting *your* customers drift away to competitive products that have been quicker getting to market?

More and more manufacturers are recognizing the imperative need for re-appraising their production facilities and methods—in the interest of speed, quality and economy. Often the solution is more efficient methods—often, too, the need is proved to be new, better, *more efficient* machinery.

For years, the Joyce Machine Company has specialized in the building of practically every kind and type of textile machinery. A list of Joyce clients includes many of the most prominent names in the textile industry. Our experience in the textile field, our extensive facilities and reputation for precision workmanship may prove distinctly advantageous to you. It will cost you nothing to investigate. On your letterhead, request a copy of our brochure, "We've Found Joyce a Sound Choice."

JOYCE
Machine Company
HATBORO • PENNSYLVANIA
MANUFACTURERS OF PRECISION PARTS
AND SPECIAL MACHINES
FOR ALL KEY INDUSTRIES

SPECIALIZING IN MACHINES FOR
MORE EFFICIENT PRODUCTION

Before you tie up your company's money in machinery and equipment purchases, write or phone the nearest office listed below. We will submit a financing plan tailored to meet your needs. Hundreds of manufacturers are using our plan . . . to keep their funds free for working capital and other uses . . . while buying the machinery they need to increase production and profits.

Under this plan, we finance all your purchases of new or used machinery and equipment...even equipment engineered and built to meet your special requirements . . . at uniformly low cost. You make a nominal down payment and we supply the balance. You repay us in convenient monthly installments . . . with the help of increased earnings and economies effected by the equipment.

For Fast Action . . . *tell us (1) the amount and kind of machinery and equipment you plan to buy; (2) how much financing you need; (3) over what period of time you want to spread payment. We'll immediately submit a plan to cover your specific needs. Write or phone the nearest Commercial Credit office listed below!*

COMMERCIAL FINANCING DIVISIONS:
Baltimore, New York, Chicago, Los Angeles, San Francisco, Portland, Ore.

COMMERCIAL CREDIT COMPANY
Capital and Surplus $80,000,000
BALTIMORE 2, MD.

FINANCING OFFICES IN PRINCIPAL CITIES OF THE UNITED STATES AND CANADA

frames are built in sizes from 12 x 6 to 8 x 3½, which is adequate to cover almost any range of yarn numbers.

During the early days of the long-draft roving frame, about 1932 through 1937, almost every installation gave considerable trouble. The first installations were made on the basis of using the heavy 60- or 65-grain sliver that was common practice in the mills then. Neither the machinery builders nor the mill men realized the necessity for lighter slivers, as this type of equipment was new to the industry. After lighter drawing slivers were employed on these long-draft slubbers, the majority of the troubles disappeared.

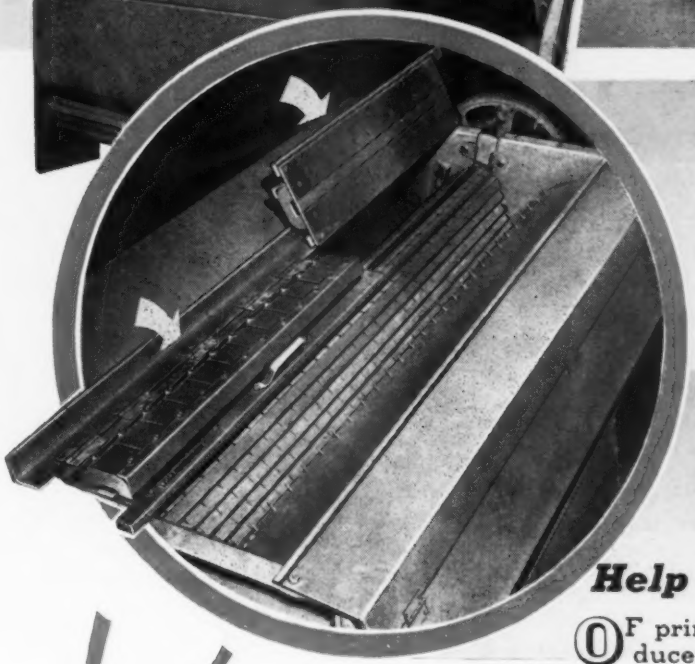
Today, no one would think of using a drawing sliver heavier than 55 grains on long-draft roving frames. A 50-grain sliver is better still. The drafting elements of these frames just will not take heavier or bulky masses of fiber and do a uniform drafting job on them, and the reason is easily explained.

HEAVY-SLIVER TROUBLE. As the heavier masses of fibers are fed into the drafting rolls, there is a tendency for the top roll to be forced upward; and the effective diameters of the rolls take place at the center of the mass of fibers. The top and bottom rolls exert a pressure on the fibers on the outside of the mass, while the fibers in the center portion depend upon frictional contact between fibers for the holding action. With the rolls in constant motion and the instant center between the top and bottom rolls at a point outside of roll surfaces and traveling at a faster surface speed than the surfaces of the rolls, group slippage within the center portion of the mass is bound to follow. It is further known that as the resultant lumpy places pass to the next set of rolls, an harmonic motion tends to be set up within the weighting assembly. It does not require delicate scientific instruments to record this condition. It can be seen by standing at one end of the frame and watching the unevenness in the ends as they go down to the flyers.

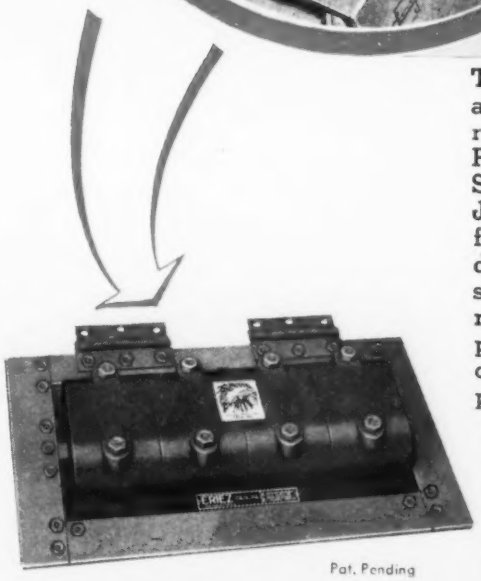
After every creeling operation on the slubbers, there are usually about six or eight cans of tailings. If these tailings are moved in behind the drawing and redrawn, a prime source of unevenness and ends down will be eliminated.

SPINNING MODERNIZED. The present-day spinning frames have been greatly improved over those of a few years ago. These improvements include more rigid frame construction, cylinders with ends that do not wring out so easily, antifriction tape idlers, higher-speed spindles, longer traverses.

10 Proctor-Schwartz Garnets . . .



protected by Eriez NON-ELECTRIC Permanent MAGNETS



Pat. Pending

Help To Reduce Production Costs!

OF prime importance in the relentless fight to reduce costs, is the removal of tramp iron from Textile Materials in process. Shutdowns due to machine damage and fire from tramp iron are unknown where Eriez Permanent Magnetic Protection is on the job. Eriez Non-Electric Permanent Magnets above the spiked aprons of Proctor-Schwartz Garnets in the National Worsted Mills Inc., at Jamestown, N. Y. are removing every particle of tramp iron from the material. The obvious saving affected by preventing damage to costly machines, eliminating the fire hazard from sparks caused by the entry of tramp iron into processing machines, is reflected on the cost sheet in this mill. The powerful magnetic field of the Eriez is always working . . . no current, wires or gadgets to maintain . . . Eriez Magnets are permanently magnetized . . . first cost is last cost.

CLIP AND MAIL TODAY

Please send bulletin No. 104 and the following: TW-6

Data on Eriez Magnets for:

☐ Wool ☐ Cotton ☐ Worsted ☐ Other processing lines

Eriez data on: ☐ Gravity Conveyor ☐ Mechanical Conveyor

☐ Pneumatic Conveyor ☐ Equipment on Processing Machines

Name .....

Address ..... City ..... State .....

For Complete Textile Magnetic Protection . . . See Eriez First

Eriez Jumbo Magnets are available for the Toughest Separation Job.

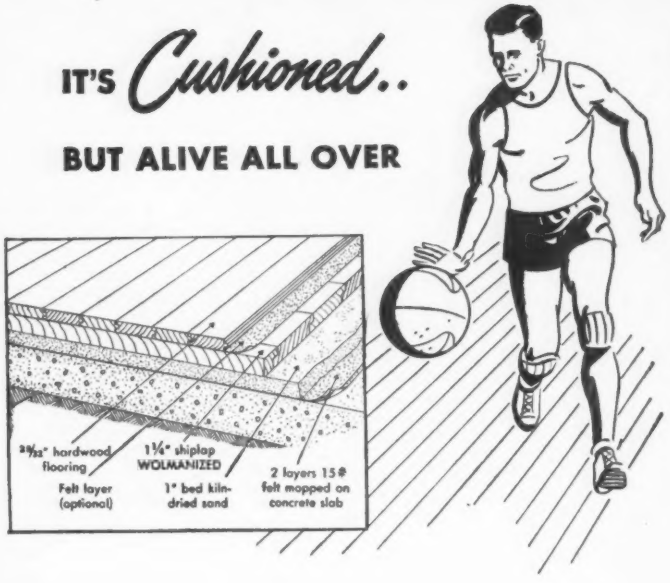
Eriez EAR' EEZ

ERIEZ MANUFACTURING CO.

501 EAST 12th ST. ERIE, PENNA.

IT'S *Cushioned*..

BUT ALIVE ALL OVER


29/32" hardwood flooring
Felt layer (optional)
1¾" shiplap WOLMANIZED
1" bed kiln-dried sand
2 layers 15# felt mopped on concrete slab

The Floating Floor, evenly supported at every point, has the real resilience of wood—plus!

No dead areas or hard spots to spoil the game, when a gymnasium floor follows this design. Players report "no shin splints and less fatigue". And it's quiet.

No expensive rebuilding jobs because of decayed subfloors, either, when Wolmanized Lumber* is used there. Pressure treatment with Wolman Salts* preservative makes standard structural lumber highly resistant to decay and termite attack. You save on upkeep.

For Industrial Buildings, too.

Floating Floors employing Wolmanized Lumber offer many advantages: easier on workers, quieter, longer lived, smoother trucking, and cost less to maintain.

*Registered trademarks

1672 McCORMICK BUILDING, CHICAGO 4, ILLINOIS

and a number of superior drafting attachments.

About six or seven years ago a spinning frame featuring compound drafting elements was brought into this country from abroad and operated in a thread mill in New England. This frame made yarn in the 100-count range from 0.50 hank, combed, 12 x 6 roving, fed both double and single, with drafts of 250 and 125, respectively. The yarn made from both the double and single roving compared favorably in uniformity and strength with the same count produced on the mill's conventional equipment. This is mentioned to indicate the extreme drafts which have been accomplished in spinning.

In mills equipped with conventional machinery, the multiple doublings provided a cover for a multitude of sins. In explanation of this statement, there have been many conventional mills in which lap, sliver, and roving sizes were not taken for years; and the mills apparently got by with it. In the abbreviated process of today, however, a situation of this kind would not go undetected for long. There are some mills which still swear by the multiple doubling of the conventional organization, even though there are modernly equipped, low-cost mills which are producing good yarns and fabrics.

It is generally conceded that yarn strength is closely allied with uniformity, and it has been proved in mill after mill that stronger yarns can be produced in organizations where fewer processes were used. Scientific tests, in which both the compression type of instrument and the yarn scanner have been employed, also indicate that more uniform yarns and rovings can be produced on up-to-date equipment.

The production of stronger and more uniform yarns on modern machines requires the appreciation of newer techniques, the re-training of operators, more adequate control methods, and the exercise of closer supervision.

Centralized Maintenance

(*Continued from page 145*)

is that a specialist does not have the opportunity to become familiar with the operation and repair of other makes of machines. However, the system has worked efficiently and advantageously.

USE OF SIGNAL. When an operator desires to signal a mechanic, she turns on the light assigned to that machine at the signal board located in the production area. The corresponding light on the master board in the mainte-

What WEIGHT WIRE DESIGN EYE FINISH . . . SHOULD YOUR HEDDLES POSSESS ?

Remember-

Every Fibre or Warp Thread that is woven into a finished fabric must pass through the eye of a heddle for the entire length of the warp, therefore it is most essential that the heddle be

Absolutely Perfect—Be Made To Meet All Conditions.

The eye must be designed, shaped, formed and finished to be absolutely suitable for the warp yarn or fibre being run. It must be so shaped as to permit the warp thread to pass through without any friction.

The thickness of the wire used must be of the proper weight to assure the correct ratio of the number of heddles per inch per shaft.

The finish of the heddle must be so perfect as to permit the fibre thread to pass through easily, speedily, smoothly and without being marred in any way.

The heddle rod openings must be so perfectly designed and finished as to permit the heddle to "float," so to speak, with the tension of the warp thread.

Ste-Hed-Co

Heddles are made in sizes, styles, designs and weights for every known weave and material.

STEEL HEDDLE MFG. CO.

2100 W. ALLEGHENY AVE., PHILADELPHIA 32, PA.

and **SOUTHERN SHUTTLES DIVISION**

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ONYX IONICS

Newsworthy items for textile technologists and production men

Volume 1 June, 1947 Number 3

Non-Ionic Surface-Active Detergent and Emulsifier with Unusual Dispersing Action

Neutronyx 330 provides exceptional dispersing effects and emulsifying action together with complete compatibility to electrolytes, hard water, normally met with concentrations of acids and alkalies, and all anionic or cationic surface-active agents.

It is particularly valuable as an auxiliary detergent in hard water conditions, and has shown unusual results as an assistant in the chlorination of wool for shrinkproofing.

Neutronyx 330 is very useful as a leveling agent or retarder in acid dyeing of wool. It has the added advantage of not adsorbing on textile fibres.

It is in wide use on other textiles in such applications as: a scouring assistant for rayon and acetate; a dispersing and solubilizing agent for acetate colors, as well as for pigments in organic vehicles; and as an assistant to improve exhaustion of anionic or cationic hosiery finishes. It is a good wetting agent in warm water, and shows unusual stability against hardness, electrolytes and both anionic and cationic surface-active agents.

NEW DEVELOPMENTS

For Further Details Write Onyx

Material Improvement in Sanforizing is obtained when the goods, prior to shrinking, are passed through a 1% solution of Phi-O-Sol. This powerful wetting and penetrating agent insures hydroscopic and easily wetted goods with ultimate superior "shrinkproofness." No. 53

●

Assuring Level Shades on All Piece Goods, unions and pile fabrics, Onyx NSAE (Naphthalene Sulfonic Acid Ester) is highly concentrated and requires smaller amounts than other penetrants. Works in neutral alkaline or acid solution and is unaffected by hard water, acids, alkalies, hydrosulfites, bleaching liquids or mordanting agents. No. 54

●

A Smooth, Mellow Hand on Rayon Taffeta is best obtained by the use of Onyxsan S followed by partial drying and hot calendering while still slightly damp. No. 55

●

Effective Crush Resistance on All Cellulose Fabrics is an outstanding function of Onyx NCF Paste. This urea formaldehyde compound imparts a durable and crush resistant finish. No. 57

Onyx Resin Finishes Are Fitted to the Specific Job

Synthetic resin finishes of considerable versatility are sometimes desirable. A typical example of an exceptionally versatile finish of this type is Onyx Xyno Resin AA40. This vinyl resin dispersion offers a wide range of finishes from a full, mellow hand to a good stiff body on cotton, acetate and rayon textiles. The type of finish desired is obtained through suitable manipulation.

On the other hand, a far more specialized resin finish is desirable more often than not. Onyx Resin S-69 is an excellent example. This solvent-free special copolymer resin dispersion was developed to provide a dry, "springy" hand, and is proving of considerable value for nylon and other nettings.

Onyx Resin 362, a viscous vinyl resin dispersion, is peculiarly valuable for imparting a special stiff finish on organdies, marquisettes, ninons, etc., while Eternalure D-15 is still another example of a specialized resin finish.

If you are interested in a specific resin finish for any particular textile, consult an Onyx salesman or technician.

PERFORMANCE

Surface Tension (Dynes per Cm.)
DuNouy Tensiometer (25°C.)

Concentration	Dynes
0.5%	34.5
0.1%	35.2
0.01%	35.4

Wetting Action (Draves Test)

Concentration	25°C.	60°C.
0.5%	215 Sec.	27 Sec.
0.2%	5 Min. Plus	56 Sec.
0.05%	"	170 Sec.

Detergency
Hunter Reflectometer with standard soiled cotton before and after washing.

Concentration	Per Cent
0.1%	13.5
0.05%	11.9

With addition of 0.25% TSPP

0.1%	22.8
0.05%	15.0

For a Full, Mellow Hand on Nylon Hose

Nylons finished with Eternalure D-15, the one-treatment resin finish, have greatly improved snag resistance, clarified and tightened stitch and desirable body without excessive stiffness. "Eye appeal" is notably improved on every gauge and denier hose.

From the finisher's viewpoint, Eternalure D-15 has many advantages. The treatment is easy to apply without changes in equipment or operations. Hose, particularly sheer types, are easier to handle after boarding. Deposits do not build up on the forms, and hose do not stick.

onyx

Onyx Oil & Chemical Company

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nance shop also goes on and is immediately answered by the mechanic. When he arrives at the station, the operator explains the trouble. When repairs have been completed, the mechanic turns off the lights.

In cases where repairs cannot be completed without undue delay, another machine is fitted on the sewing table; and the damaged machine is returned to the mill maintenance shop for overhauling. This practice ensures continuous production without extended stoppages.

When the white lights on the signal board are turned on, the transfer clerk answers the signal and is available to dispatch any message desired. The supervisor, foreman, or superintendent, if near by, will also check the white-light station.

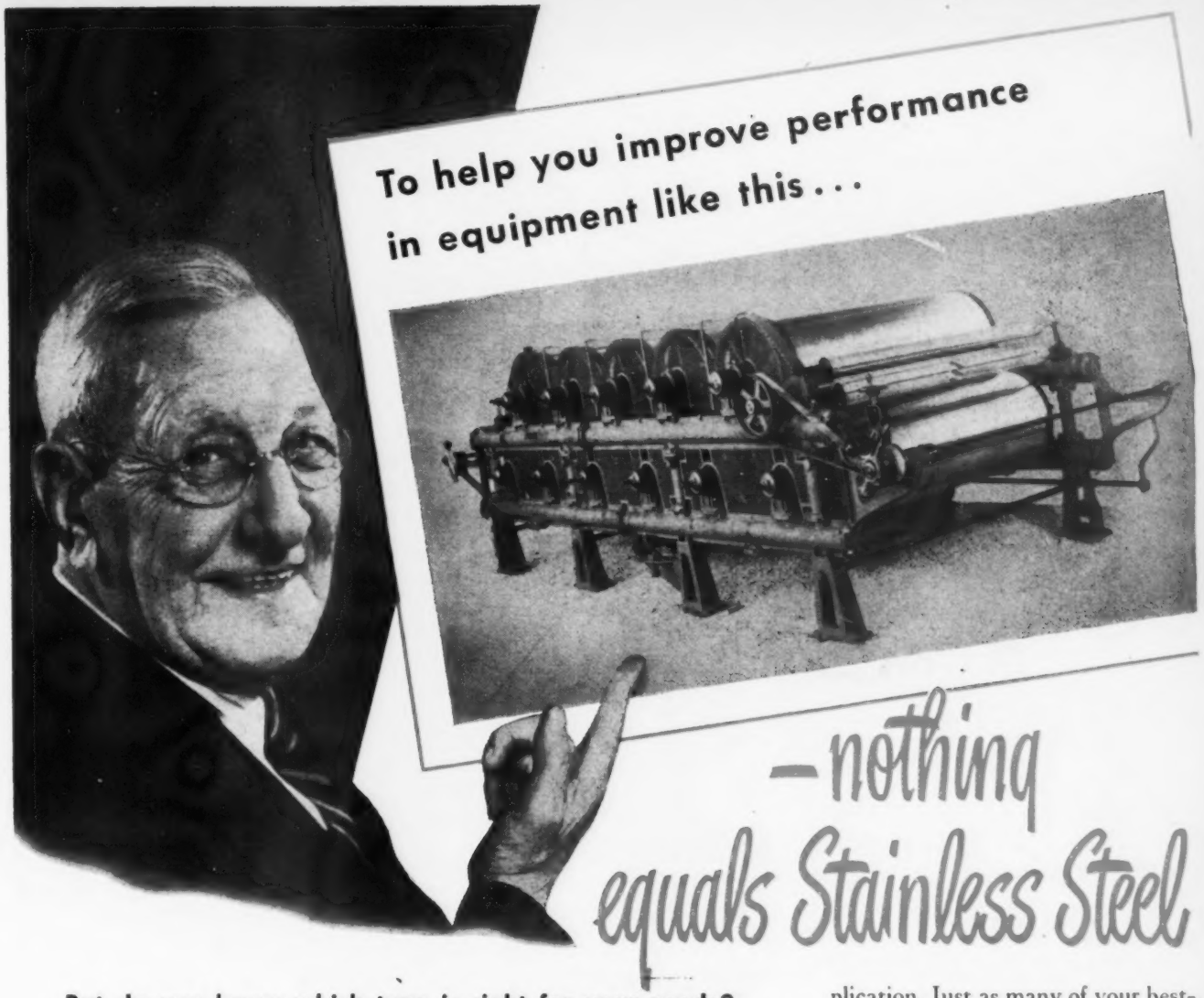
The signal system, installed by the mill's electrician, will be extended to the additional production areas planned as a part of the mill's expansion program.

Circular-Knit Finishing

(*Continued from page 129*)

blade inside the edge of the spreader; splitting may be done on one or both sides. Cloth that has been split on both sides may be rolled double on one roll or separately on two rolls. Goods that have been split on one side may be opened to full flat width similar to woven goods.

MANY VARIABLES. Spreaders are of various sizes and are usually adjustable to accommodate cloth which comes off knitting machines of different diameters. Due to the natural elasticity of circular-knit fabric, there is a greater variable in finishing widths than is common to woven fabrics. Because of the variables of stitch, yarn size, and gage, it is almost impossible to determine by a given formula what the finished width of a fabric should be; the matter of width is a practical one and must be determined by trial and error. Generally, it may be stated that the square area of a fabric remains the same: pull the length and the width shrinks; extend the width and the length decreases. Tension bars are used in front of the finishing calenders to provide for lengthwise tension if needed; spreaders are used for setting the width. Within limits, tension serves as a means of controlling the width-length ratio of a cloth; but excessive tension placed on circular-knit cloth defeats its purpose. Usually, circular-knit fabric is finished two inches wider than the minimum specified width; this permits a safe leeway for contraction of width when the cloth has its initial loss of moisture dur-



—nothing equals Stainless Steel

But do you know which type is right for your needs?

THE many advantages of using Stainless Steel are well known to the textile industry. In dyeing, bleaching and finishing equipment, Stainless Steel has demonstrated its ability to save money, to increase production, and to improve product quality.

Its use has resulted in closer color control; has speeded up change-overs, prevented color-bleeding, and eliminated losses due to dye-bath contamination, rust and canker. Its record for success has in fact been spectacular.

Once in a while, though, we are told by a textile mill operator that he had built his equipment of stainless steel but wasn't getting the trouble-free runs he had expected. Upon investigation, the explanation in most cases has been quite simple. The equipment had been built with "stainless steel"—merely under the assumption that so long as it was labeled "stainless" it would serve the purpose. Actually, the term "stainless steel" covers a wide variety of superior steels—and each of these steels is designed for a specific type of application. Just as many of your best-grade textiles, while all of top quality, are designed for different uses, the same is true for this group of heat- and corrosion-resisting steels.

That is why we offer textile manufacturers the services and advice of men who spend all their time working with U·S·S Stainless Steel. With years of experience in developing, testing, and applying U·S·S Stainless Steels of all grades, they are equipped to help you determine exactly what particular type of Stainless will do the best, most economical job for you and what is the best fabricating procedure to insure top performance.

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

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UNITED STATES STEEL

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EVER FIGURE OUT how much it costs you *every time* one of your workers opens an ordinary door? Your time study man can tell you about this in a hurry.

Maybe it's only 30 seconds, but when you multiply this by the number of times a door has to be opened each day and then figure the number of days in a month and the number of doors in your plant, it adds up to real money . . . money you're losing, day in and day out.

Stanley Magic Doors put an end to all this time loss as well as the loss from product soilage and damage when trucks are used to bang open doors. Scientifically-placed photo electric eyes automatically open and close doors, speed traffic and guard the efficiency of heating and air conditioning systems.

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STANLEY DOOR CONTROLS

Trade Mark

The Magic Door

ing the first few days after finishing, when the moisture content of the cloth stabilizes.

Sometimes, the yield of a fabric is a matter of importance; the yield being the number of yards per pound. Weight can be added to a cloth by loading, thus decreasing the yield. The use of tension in finishing will add length to the cloth, thus increasing the yield. The other variables controlling yield are yarn size, number of stitches per inch, and knitting-machine diameter.

A fabric has a natural loss in weight due to scouring, bleaching, and dyeing. A cotton cloth weighing 100 lb. in gray may weigh 93 lb. after bleaching and scouring, but the addition of non-curl solution may bring the weight back to 96 lb.; by loading the goods, the weight may be brought back to original gray weight or higher.

FINAL FINISH. The type of hand and finish of a cloth is determined by the kind of finishing materials used in the quetsch operation. The cloth can be given a soft underwear finish, a firm but not stiff polo-shirt finish, a starch glove finish, or a stiff curtain finish of a temporary or permanent nature. Water-repellants and fire-retardants as well as weighters and non-curl are applied in the quetsch.

Terry cloth is knitted with the loops on the inside or outside of the fabric tube. If the loops are on the inside, the cloth must be turned inside out, preferably before dyeing and finishing. Since it is desirable that terry cloth have a feathery, fluffy character, it is not calendered smooth and flat, nor is it loaded or weighted. Terry cloth should be scoured thoroughly and dyed in the presence of wetting agents so that the dye penetration will be uniform and thorough.

Interlock is a particular type of knit fabric, knitted usually of fine combed or mercerized yarn. Cotton motes are usually shaken out in the processing operation of cotton jersey and rib; but, due to type of stitch and fine yarns used in interlock, the cotton motes or seeds remain in the cloth after dyeing and finishing and present a problem. In dyeing of interlock cloth, the usual bleach-bottom is not sufficient to remove the cotton motes; so interlock fabric should be given a full bleach even though it is to be followed by the addition of dyestuff. Yellow and maize seem to be the critical pastel shades for cotton interlock as far as the motes and seed problem goes.

STRIPES NEED WATCHING. The finishing of yarn-dyed stripes for polo-shirt cloth is a problem. When the cloth goes through the spreader, the

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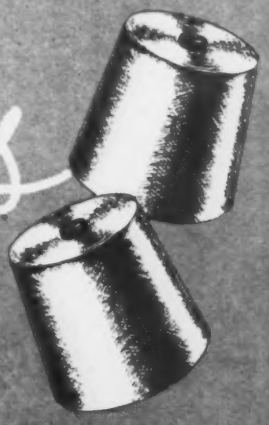

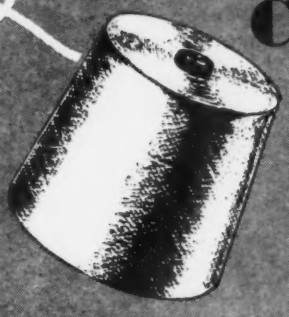

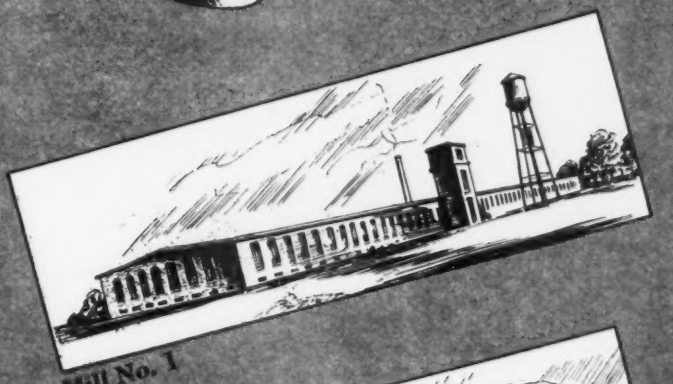

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From the highest quality long staple cotton available *Carolina premium yarns* are spun in these modern mills by men who have been identified with the spinning industry for generations.

Since war's end our production has increased to a present capacity of 5 million pounds annually. With this production we are in a position now to serve world markets with the same premium yarns that built our reputation in America for smooth, uniform, high breaking strength yarns of the finest quality.

THE EXPORT DEPARTMENT

Carolina Yarns has a well organized foreign department, shipping 30's, up to 100's counts, single and ply, carded and combed yarns, any put up, anywhere in the world. Export-packed to assure delivery in perfect condition. We invite inquiries. BUY DIRECT from the mills.

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Experience is the best teacher and this company has had half a century of it in manufacturing shuttles and bobbins for all fibres.

All wood for Lowell Products is well seasoned and kiln dried. Every operation is performed in our own shop to control quality and speed up deliveries. Any desired finish can be furnished. May we hear from you?

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friction of the moving cloth at the sides and the lack of friction in the center make for unequal tension so that a bow or curve appears along the width. Naturally, if this condition were permitted to exist, the polo shirt stripes would be curved. The use of a patented spreader has solved this problem. Of late, the use of 64-feed knitting machines has set another problem of finishing polo-shirt stripes. The multiple-feed machine knits a spiral stripe rather than a true circular stripe, and the correction cannot be made with the patented spreader. At present, some cutters are splitting the cloth at one side and are sewing the hand-synchronized stripes together. This method seems to be laborious, and a simpler method will have to be devised.

Circular-knit goods are split and handled as a piece of flat-woven goods when napped for a fleece face.

Circular-knit goods are generally bleached or dyed into solid colors; less generally are they screen or roller printed. In printing, tricot fabric is more widely used than circular-knit cloth. The type dyes most commonly used on circular goods are direct, sun-fast, and developed colors, with very little vat colors used.

As a means of cloth fabrication, circular knitting is cheaper and faster than cloth fabrication by the warping and weaving method. Knitted fabrics have an elasticity not found in woven fabrics, a characteristic desirable in close-fitting apparel.

Circular-knit goods can be bleached, dyed, printed, coated, and can be given almost any type of finish and hand desired. The multiplicity of finishing problems is such that the specialist in the field is usually the best equipped and adapted to handle those problems as they arise, as well as to give quality work on circular-knit finishing of the usual character. The entire field is still ripe for expansion and development.

Machine-Shop Needs

(*Continued from page 131*)

straightening, etc., while the electric process is used for building up shafts, welding steel parts, etc. There must be on hand a good variety of rods and flux to do all the different types of work which may come up. A competent welder is also a necessity; for it is obvious that if the repaired part breaks after welding, the cost of removing it again, rewelding, and ultimately replacing it in the machine, with lost production time involved, will soon offset the cost of a good welder.

Among the machine tools necessary for the minimum shop should be at

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N. Y. June, 1947

The inner carton fits into the lower section for packing, then the upper section (right) is lowered over the top giving double-walled protection for the rayon cakes or cones inside.

New Shipping Container Saves Space, Protects Rayon from Damage and Dust

A corrugated fiberboard container that is non-returnable and provides a number of other customer advantages, is fast replacing the old-style packing cases in which rayon cakes and cones have been shipped from American Viscose Corporation plants.

Especially designed, the container has an inner carton and an upper and lower outer section. The inner section is placed in the lower outer section for packing. Then the upper outer section is placed in position so that the two outer sections butt at the center.

Packed and handled in an upright instead of horizontal position, the container saves floor space during packing, shipping and storing. Sealed at all joints, it keeps out dust and soot in transit. And even if its outer carton is damaged, the inner carton protects the rayon from harm.

Smaller and lighter, yet holding 96 cones, the new container conserves not only space but also dead weight. Customers report new ease of handling and unpacking the containers.

"Avisco" Movie Shown in Plant Town Theaters

Local theater patrons in many of the American Viscose Corporation plant towns are currently seeing, or have seen, the new AVC technicolor film, "Science Spins A Yarn." The 23-minute feature quality show with Regis Toomey and a top-flight cast has been shown in Meadville and Lewistown, Pa., and Charleston, Nitro and Parkersburg, West Va.

10,900 people saw the film in Meadville, 10,800 in Lewistown and 7,941 in Charleston and Nitro. Figures are not yet available on the Parkersburg showing. Further plans call for presentations of the film in Front Royal and Roanoke, Va.

16mm. prints of the movie are available for showings to interested groups. The major distribution will be handled by Association Films, also known as the Y.M.C.A. Motion Picture Bureau.

RAYON 20 YEARS AGO

A trade journal notes that abbreviated skirts are compelling manufacturers to pretty up women's and misses' stocking tops... with rayon.

In high pile fabric for automobile upholstery, rayon is used for coverage to an extent far exceeding the 1926 demands.

World rayon production forecast for 1927, based on the first six months, places the total at 250 million pounds – 15% above last year's figures.

MAKE USE OF *Avisco* 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

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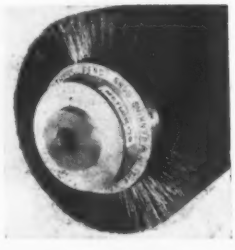
METLKOR* FURNISHER BRUSHES
••• They last months longer"

A leading printer (name on request) says, "Prior to using Jenkins' 'Metlkor' nylon bristle brushes, we used wooden furnisher brushes. Then we got a sample Jenkins' brush. It far outlasted our old brushes. We used to buy a dozen wooden brushes every few weeks. We haven't had to replace a Jenkins' 'Metlkor' brush in months."

You, too, will find you get longer brush life, and save money in many other ways when you use Jenkins' "Metlkor" brushes.

*Reg. U. S. Pat. Off.

"Metlkor" Furnisher Brushes, Blanket Washing Brushes, Shearing and Brushing Machine Brushes, Pressing and Carding Machine Brushes and many others.



Write today for fully illustrated catalog of Jenkins' "Metlkor" nylon or Plain Bristle Brushes.

M. W. JENKINS' SONS, INC.
CEDAR GROVE, ESSEX COUNTY, NEW JERSEY

Since 1877 manufacturers of industrial brushes exclusively.

least two lathes. The larger of these lathes should take about 8 ft. between centers and swing 18 to 20 in. The small lathe should take 3 ft. between centers and swing 14 to 16 in. These lathes require a four-jaw chuck each, and the small one should have a three-jaw chuck as well. There should also be the usual accessories of lathe dogs, mandrels, sockets, drills, reamers, tools, and toolholders.

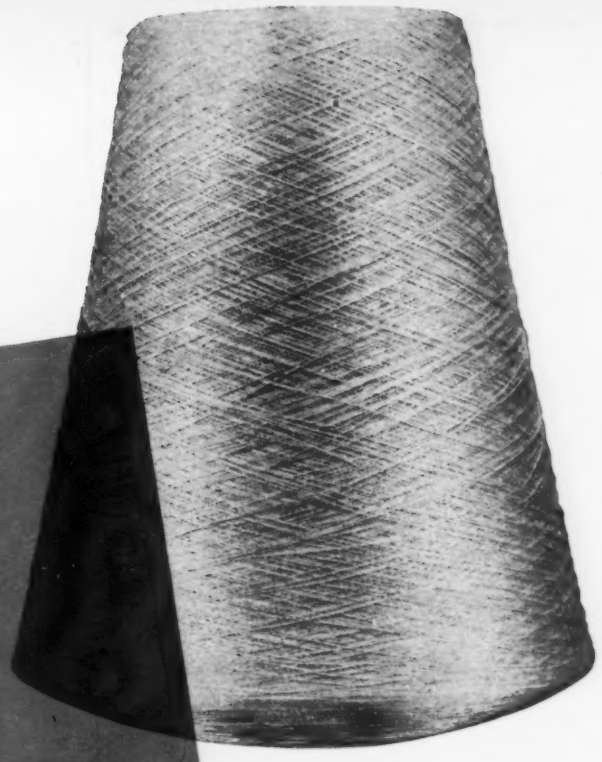
The shop should have a shaper with about a 16-in. stroke for flat work and a set of related tools. There should also be a milling machine for cutting keyways and doing other work not suitable to be done on a shaper. The milling machine will require flat and face milling cutters, together with keyseating cutters for plain and Woodruff keyways. If it is planned to cut gears, index centers and gear cutters will be required. As eight cutters are required for each pitch, about 60 of these cutters in all will be needed. Actually, it is not reasonable to do much gear cutting on a milling machine, as the process is much more costly than when done on an automatic gear cutter which may be found in many job shops.

A drill press is obviously necessary, together with a large assortment of drills and reamers. A vise, together with associated clamps, will be necessary for use on the drill as well as on the shaper. A mandrel press is useful for putting in bushings on lathe mandrels, and also for straightening bent pieces. For cutting large bars (anything over 1 in.) a power hacksaw is essential.

Small tools for the shop include V-blocks, clamps, micrometers, parallel strips, and a surface plate. A full range of taps and dies should be available, both in standard as well as in SAE threads.

MATERIALS NEEDED. The shop should have castings available in various sizes suitable for bushings, including babbitt, bronze, and iron. It should also carry a full range of sizes of steel in flat, round, and square, in which both hot-rolled and cold-drawn steels should be represented. There should also be an adequate assortment of nuts, bolts, screws, and Woodruff keys.

It has often occurred to the author that many customers of the average textile mill are themselves large enough to go into yarn spinning or weaving or knitting, but that for various reasons they leave it to specialists to supply them with those materials. A somewhat like situation, he believes, holds regarding machine shop work. Merely because the mill is large enough is not alone the criterion for adding the shop. The job shop can carry a



DOES YOUR KNITTING YARN HAVE *Vitamin* Q ?

Vitamin "Q" is *Quality*. And, as you know, good yarn *must* have Quality. With Boger and Crawford, Quality in knitting yarn is foremost — even above its production cost to us!

To be sure, the cost of making this yarn is high. Research — testing — production — all are thorough and expensive — but worthwhile! Because out of it all you get a *better* knitting yarn steeped with Quality. Yes, Vitamin "Q" is essential in knitting yarn!

The Quality of Boger and Crawford knitting yarn is guaranteed—the highest tribute we can pay it.
Signed . . . . . .
Fredaricka Boger

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MERCERIZED YARNS

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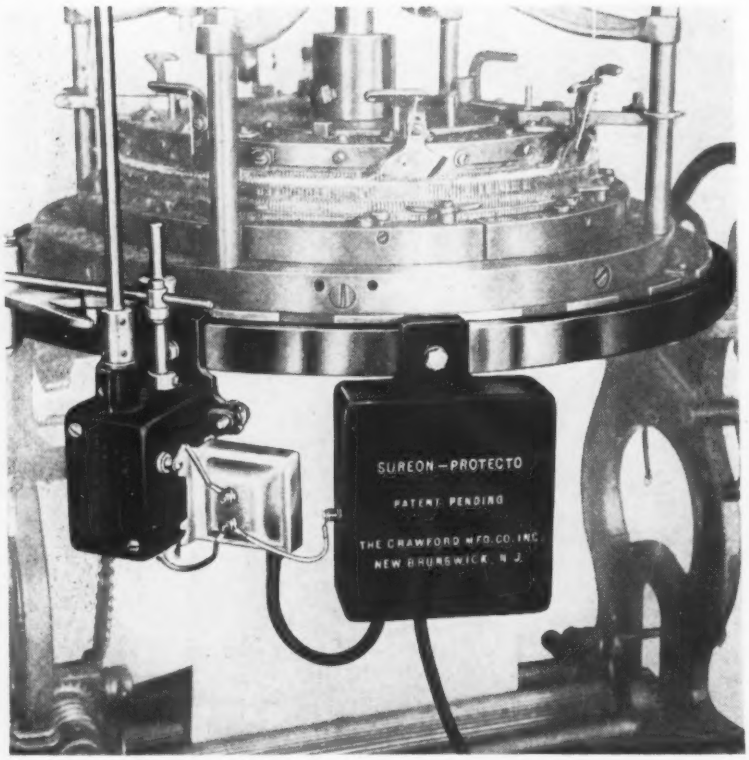

As Shown at the Knitting Arts Exhibition

NEW CRAWFORD SUREON-PROTECTO BOX

If a fuse blows on the lighting line, or if the plug which is attached to the stopmotion is accidentally pulled out of the socket, the Sureon-Protecto Box will instantaneously and automatically stop the knitting machine. This prevents the machine from operating without the stopmotion protection and prevents serious smash-ups. This box can easily be attached to Electric Stop Motions already in mills, and may be ordered when placing new orders for stop-motions directly with us or with the machine builders.

Specify Crawford Electric Stop Motions and you specify the finest. Copy of our new catalog sent on request.

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larger stock of material and have available a greater variety of machines to do the work. If confidence exists between the job-shop owner and the mill management, there is no reason why the relationship should not be satisfactory. If a mill constantly shops around among local machinists, giving some jobs here and some jobs there, no one will have the same interest in keeping his machines in repair as though one of these concerns did all the work. In the long run this shopping about will doubtless cost the mill more than if the work was concentrated in one place.

The mill which decides to do its own shop work would do well to spend considerable time on planning and get the best independent advice possible. The inside shop is presumably considered as a money saver for the company, and it has no reason for being unless it lives up to that purpose.

Warp-Size Test

(*Continued from page* 125)

work with its complicated relationships of many properties will not always give an accurate picture of weave-room performance. The Shirley Textile Institute of Britain also has not been able to predict weaving quality accurately by laboratory tests. Sizing is still more of an art than a science, although the scientific angle is being developed day by day, both here and in England.

VARIOUS PROPERTIES OF SIZED YARN. What, then, are the properties of a well-sized yarn? A good warp size, well handled on the slasher (and that is very important, too), should give increased tensile strength, flexibility, elasticity, good fiber-lay, smooth size film, and hygroscopicity to the yarn. The last term means the ability to attract moisture and hold it, thus allowing weaving to be carried out at lower humidities, with attendant increased comfort to the weavers and less tendency to rust machinery parts.

Tensile strength has been much used in the past as a basis for judging a sized yarn, principally because it is easy to measure. Increase in tensile strength of sized yarns is due to a gluing together of the fibers of the yarn, so that they do not slip past each other. This can be seen by breaking an unsized yarn. The break is uneven with unbroken fibers which merely slip and stick out. This is even more obvious if the yarn is first untwisted. A heavily sized yarn will break almost squarely.

The effect of the film itself on increasing the strength is small, since the film strength is much less than the fiber strength, and the individual cot-

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Colorful, durable, eye-arresting fabrics are being woven of SARAN monofilaments to create new, glowing interpretations of the decorator's art. For the home, for hotels and restaurants, for public transportation — these wear-resistant fabrics set a new high in sales appeal.
SARAN BY NATIONAL denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Saran, a vinylidene chloride copolymer made by The Dow Chemical Company and supplied to mills, weavers and other fabricators for specific end uses.
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SIZE COOKING CONTROL

- *Electronically* controls the cooking temperature at any point from 100°F to 210°F.
- *Automatically* governs the length of time for bringing the cold size mixture up to cooking temperature—adjustable from 15 to 90 minutes.
- *Electronically* sets and maintains the temperature at which the cooked size will be held until it is removed from the kettle — within a range of 100°F to 210°F.
- *Automatically* times the length of the cooking cycle for a predeterminable period of from 20 to 180 minutes.

LIGHTS INDICATE...

- When the size mixture is being raised to cooking temperature.
- When the size is cooking.
- When the cooking is completed and the mixture is at the desired holding temperature.

SIZE COOKING CONTROL

TEMCHRON, the only *completely electronic* time-temperature cycle controller, provides hitherto unattainable accuracy, flexibility, and reliability. Identical cycling is assured from batch to batch, for any dial settings, yet simple adjustments permit cycle changes as required by different size formulas. Changes in any part of the cycle — warm-up time, cooking temperature, cooking time, or holding temperature — can be made *by simply resetting calibrated dials.* Write today for Bulletin F-3054 describing details and applications of TEMCHRON, *another Unit of Complete Slasher Control by Barber-Colman.*

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45 YEARS EXPERIENCE SERVING TEXTILE MILLS

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ton fibers are as strong as steel of the same size.

FALLACY OF TENSILE STRENGTH. Then why should not the mill get as high a tensile strength as possible by obtaining good penetration and glueing together the fibers all the way to the center of the yarn? This has been tried, as fallacy number one. In the first place, the fibers go in and out from the center, so that most of them are glued at some place along their length even with the surface size. In the second place, if the size penetrates all the way into the center of the yarn, the result is a stiff, rod-like quality, due to loss of flexibility. With all the bending a warp yarn must undergo, the changing of the shed and the bending around the filling yarns, the yarn must have flexibility.

It is obvious that a tube filled with elastic substance—in the case of the tire, air, and in the case of the yarn, cotton fiber—is much more resistant to shock because of the cushioning effect than a solid tube would be.

Beside the loss of cushioning effect, an excess of penetration will decrease the elasticity of the yarn, since size films generally are not so elastic as the fibers. No matter if the tensile strength is doubled, if the loom acts to stretch the yarn farther than its elastic limit, the yarn breaks; and the loom is more powerful than the yarn.

SIZE FILM REDUCES SHEDDING. Although an increase in tensile strength is usually helpful, it should not be obtained at the expense of other important properties. The size film should penetrate just deeply enough to give a good anchorage to the outside of the yarn so that there will be little tendency to shed.

To return to the question of flexibility, a flexible film is produced only by the proper combination of good sizing materials and good slashing. For example, size film must not be overdried on the slasher. We must remember that these starch films in size behave the same toward heat as they do in bread. Bread, once toasted, will never again become flexible and elastic, no matter how much it is soaked. It will soften, true enough, but its toughness and flexibility are lost forever.

GUMS MAY ADD TO ELASTICITY. The gums added to a size can greatly affect its elasticity and flexibility. By means of chemicals, using the proper amounts under proper conditions, gums may be made from starches to duplicate the properties of practically all natural gums, with the additional advantages of uniformity, not to mention lower expense. These gums may be incorporated in the sizing com-

EXPECTATION—

—is realized when a striped fabric is knitted or woven from yarns dyed by Globe.

Globe dyers know how to give you the degree of brilliance and color fastness you require for each production purpose.

Globe DYE WORKS CO.

1865 1947

We do package dyeing on tubes, skein and warp dyeing, and warp mercerizing.

Yarns we process include cotton, rayon, nylon, worsted, blend and novelty yarns.

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THE CLUES ARE THERE! Floors soaked with oil from carding machinery; lint collecting in the puddles. The only mystery concerns the hour of the day or night that fire will strike.

But *unhappened* oil-fed fires can be *kept* from happening with SOL-SPEEDI-DRI, the fast-working absorbent for oil and other liquids. SOL-SPEEDI-DRI, a white, granular substance, keeps floors clean and safe. It will not readily burn, even when oil-soaked.

Yes, SOL-SPEEDI-DRI is an efficient fire *preventer*—but there are other reasons why SOL-SPEEDI-DRI is meeting with hearty approval in textile mills all over the country. Spread over floors made slippery and dangerous by oil drippings, SOL-SPEEDI-DRI becomes a slip-proof carpet that cuts down on falling-accidents. It helps to protect waste material from oil and grease stains; does not harm the fly; and can be easily carded.

Get the full story of SOL-SPEEDI-DRI. Write for folder that tells you how SOL-SPEEDI-DRI can cut accident rates and fire hazards, improve employee morale and increase production in your mill.

SOL·SPEEDI·DRI

ABSORBENT FOR ALL LIQUIDS

Safety and Maintenance Co., Inc., No. 1 Wall Street, New York 5, N. Y.

Warehouse stocks maintained in principal cities of the United States and Canada

pounds; and, if desired, chemicals may be added to the compounds to alter the properties of the starch.

For example, samples of size films made from pearl cornstarch were air-dried without heat to show the original properties of the film. The correct amount of heat will not change their properties, but excessive heat will increase their brittleness.

The first of the films shown in Fig. 1 is cornstarch alone. Although it was smooth and fairly strong, it had no flexibility; and when bent it broke.

This second film was cornstarch treated with certain chlorides to give greater flexibility. The result was that the film could be folded as much as desired, without damage. Actually more chloride was used than would be desired in an ordinary size film, and this second film would have been too soft for weaving. The proper balance could be struck in the sizing mix; the sample merely showed the effect produced. Many other chemicals, both organic and inorganic, could have been utilized to produce this type of effect.

The third film shown in Fig. 2 was produced by adding more tallow to the corn-starch film than should have been used for good sizing. The effect of the tallow was obvious: a discontinuous film was produced, obviously of no value for sizing. Tallow used alone in size always produces this effect, which is very familiar to anyone who likes shortening bread. Crumbly biscuits and pie crusts are made the same way, by using more shortening than usual, thus decreasing the continuity of the cooked starch mix.

FILM HARDNESS IMPORTANT. Then why shouldn't we try to put in materials that make the size film as flexible as possible? The reason for this is that general flexibility is produced at the expense of hardness of the size film. Although hardness as such is not a particularly desirable characteristic, the film must be hard enough to possess a smooth surface, even more important it must be a film that is not easily pushed about on the surface of the yarns. Practical men know what troubles occur in balling-up and in other ways when the loom gets a soft warp.

About the same comment may be applied to any attempt to get the elasticity as high as possible.

Smoothness of film may be obtained by use of lubricants, or by making a hard film, with not too much softener. There are some materials that must be particularly avoided. During the war there were various "starch substitutes" and "starch extenders," some of which contained low-grade clays. In a short length of time these materials wore

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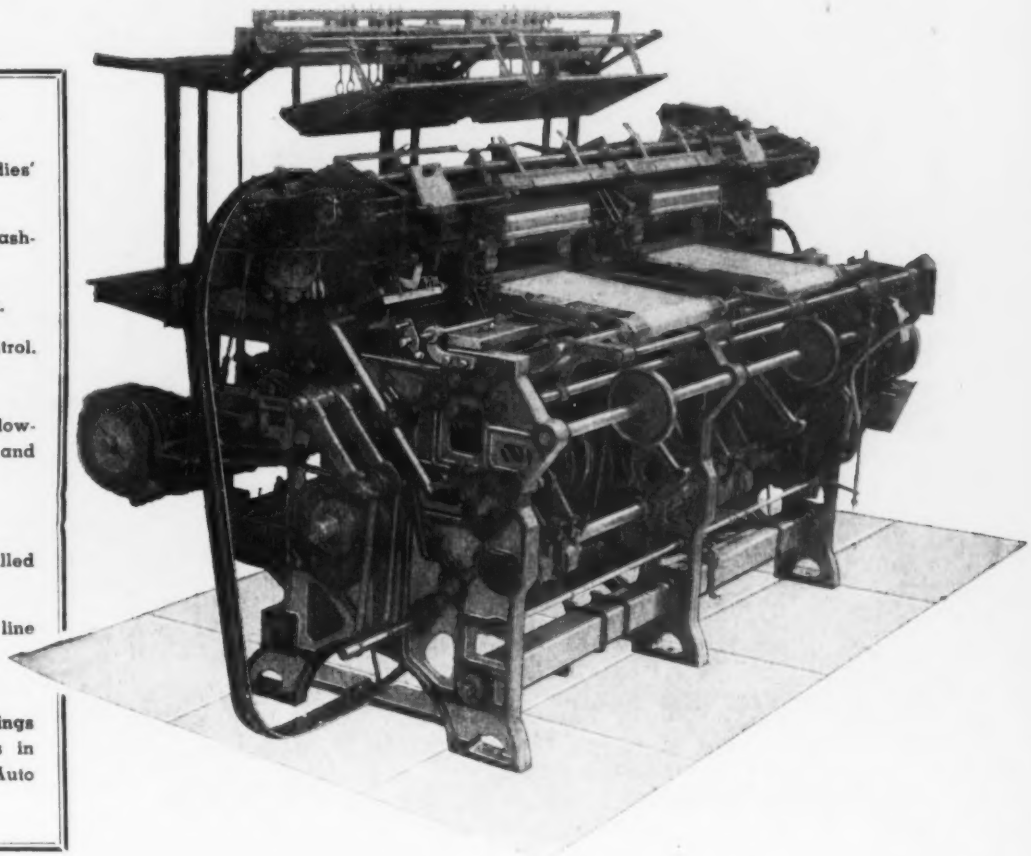
- 2 section full fashioned ladies' hosiery machine.
- High speed knitting and fashioning.
- Semi-automatic welt turner.
- Fully automatic friction control.
- Individual motor drive.
- Presently offered in the following gauges: 45 gg, 51 gg, and 54 gg.
- Up to 8 yarn carriers.
- To be operated by unskilled help.
- Simple design along the line of a standard full fashioned machine.
- To knit round heel stockings (or square heel stockings in connection with Reiner Auto Heeler).



Since 1922 the Einsiedel Reiner full fashioned hosiery machines have been among the leaders in their field. In addition Reiner Auto Heelers are widely used to knit French heels in conjunction with leggers or single unit machines.

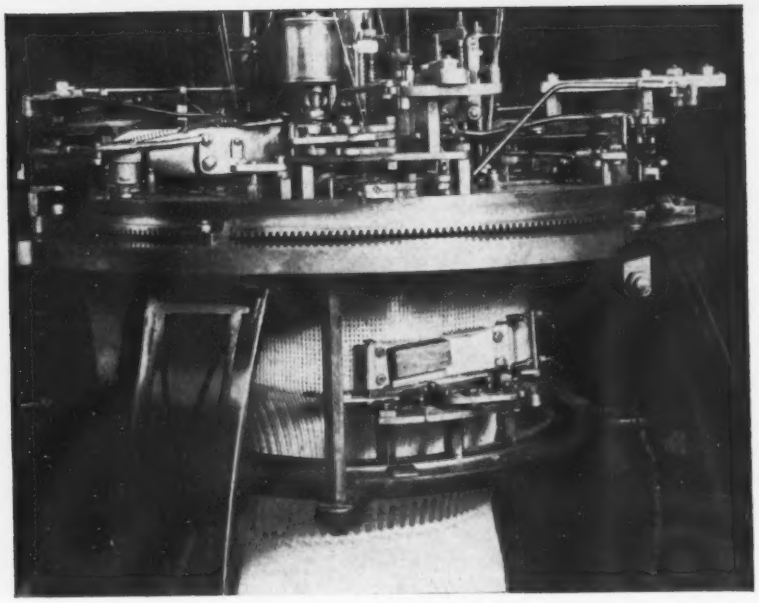
Please write us for a definite appointment, so that we may demonstrate the Twin Knitter to you in our show rooms in Weehawken, New Jersey.

ROBERT REINER INC.

FOUNDED IN 1

550-556 GREGORY AVENUE
WEEHAWKEN, NEW JERSEY

10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61, 67, 167 from the Times Square Public Service Terminal at 260 West 42nd Street, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505.



BRUSH AS YOU KNIT

There are definite advantages to horizontal or sidewise brushing on Leighton Knitting Machines. The face of the fabric is on the outside facing the operator. Brushing improves the handle or feel and smoothes out the surface to give uniformity in appearance.

The Automatic Brushing Attachment can be used for the finest and lightest of single stitch fabrics without injury or molesting the inside appearance of the stitch. Brushing sidewise produces a soft fabric and adds greatly to the sale value of your sweaters.

Specify the Automatic Brushing Attachment when ordering Leighton Machines.

LEIGHTON MACHINE COMPANY
ESTABLISHED—1873

LEIGHTON

MANCHESTER NEW HAMPSHIRE
INCORPORATED—1894

into the reeds, and in many cases harness eyes were cut completely in two in a week or so by use of these abrasive materials.

Hygroscopicity is a quality that is desirable to a certain extent. The ability of a size film to hold moisture will go a long way toward preventing troubles from over-drying or toasting the film. As already mentioned, it will also allow use of lower humidities in the weave-room, giving increased strength and flexibility due to the extra moisture in the yarn.

On the other hand, this property should not be carried too far. Too much of a hygroscopic agent will hold so much water that a soft film will be obtained, resulting in the dreaded "soft warps." A film of such nature is likely to be gummy and sticky as well.

SWARD HARDNESS TEST. Hardness of the film can be tested on laboratory-prepared film by a gadget known as the Sward hardness rocker. The rocker is set on a film so that it will begin to rock, much like a rocking chair. The number of swings it makes before it stops is a measure of the hardness of the film. It rocks more easily on a smooth, hard surface than on a soft surface.

The Textile Research Institute has shown by such tests that films which are either too hard or too soft will not weave well. The former are probably too brittle, and the latter not strong enough.

Thus, no one particular property can be used as a basis for determining the weavability of a warp. For best results, each property must be well balanced with the others.

To return for a moment to the chloride film. Since literally millions of yards of cloth sized with chlorides (which are used by most of the larger size-compound manufacturers) are finished each month without complaints, it seems hardly necessary to defend these useful materials. There still exists, however, some feeling against their use. While at Georgia Tech, the writer did some work under the supervision of Dr. Harold Bunger and Prof. C. A. Jones to determine the effect on yarns of sizing with zinc and calcium chloride. On drying with even more heat and for a longer time than is normally used, we found the strength of yarns sized with chlorides to be actually greater than those sized without. It was believed that this increase was due to the water-attracting powers of the chlorides, which hold more moisture in the yarn, thus giving it a higher breaking strength. At least, no tendering could be noticed at all.

Probably the origin of such preju-

Average prices of raw cotton, wool and silk from Textile Economics Bureau, Inc. Prices of Celanese staple fiber are for 3 denier per filament.

LANESE*

. . . a stabilizing cost factor in textile production

A major problem facing textile management is control of costs—and in this, raw material prices are a prime factor. In the case of the natural fibers, fluctuations in prices make hedging operations in the commodity exchanges as vital a part of textile mill operations as manufacturing and selling. Crop conditions, weather, shipping and world market speculation constitute unknown factors to be constantly guarded against.

Contrast this with the stabilizing influence of the modern synthetic fibers. The ten-year record of prices of Celanese synthetic staple fiber—sold under the trademark, Lanese—shows remarkably little variation. This stability of price is of prime importance to mills producing fabrics of all-Lanese yarn and combinations of Lanese and other fibers. Production can be planned on the basis of known cost. Continuity of quality is also assured, thereby eliminating the need for carrying expensive long-range inventories to assure wanted grades.

Lanese staple fiber, produced by the cellulose acetate process, offers many selling advantages in combination with other fibers, such as viscose process rayon staple. Where the proportion of Lanese is predominant in the finished fabric, added sales appeal is contributed by such points of superiority as richer hand and color, improved draping effects, versatility of weaves, increased dimensional stability. The dependable quality of Lanese—including uniformity of staple length and spinning characteristics—result in manufacturing efficiency and economy. There is appreciably less waste with Lanese.

Lanese staple fiber is a companion product to Celanese acetate filament yarn . . . developments of Celanese creative research in chemistry. Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

*Reg. U.S. Pat. Off.

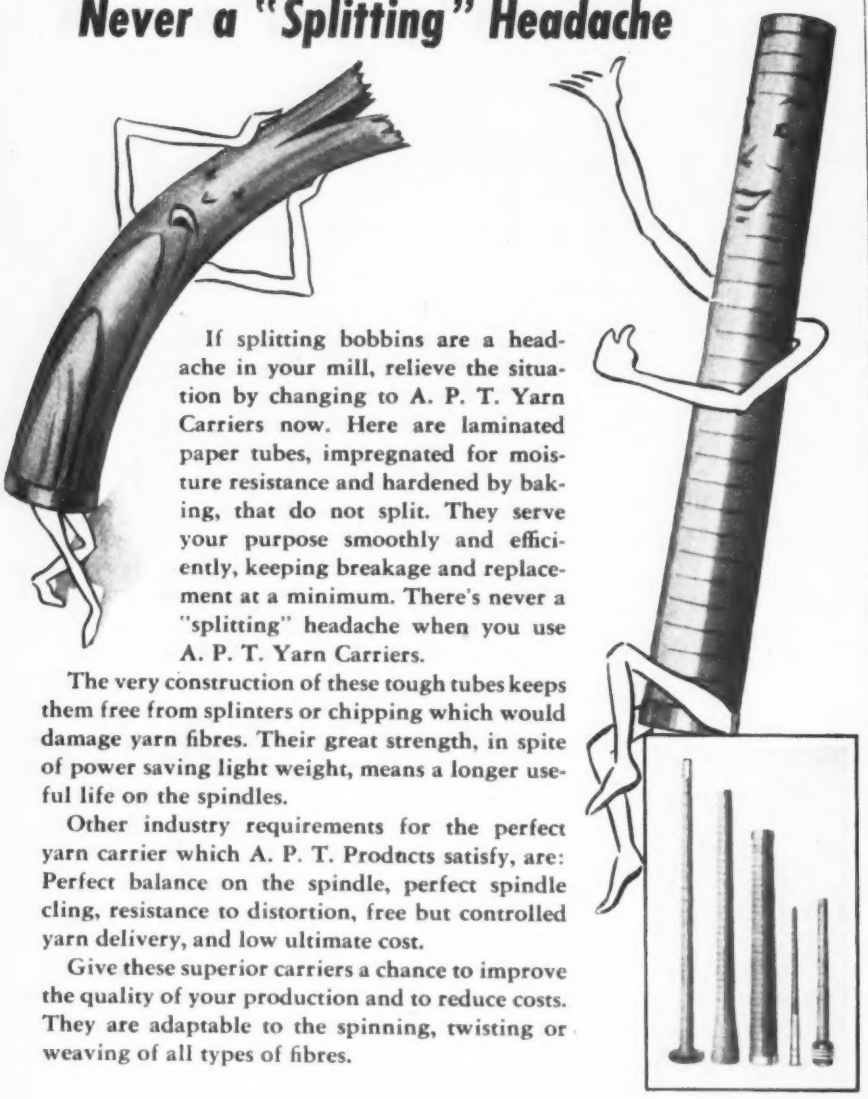
Celanese* Lanese* —SYNTHETIC STAPLE FIBER

Branch Offices: PHILADELPHIA 7, 12 South 12th Street • CHARLOTTE 2, 1100 Liberty Life Building • BOSTON 10, 140 Federal Street

A·P·T· YARN CARRIERS

From Material to Design—
Built to Industry Requirements

Never a "Splitting" Headache



If splitting bobbins are a headache in your mill, relieve the situation by changing to A. P. T. Yarn Carriers now. Here are laminated paper tubes, impregnated for moisture resistance and hardened by baking, that do not split. They serve your purpose smoothly and efficiently, keeping breakage and replacement at a minimum. There's never a "splitting" headache when you use A. P. T. Yarn Carriers.

The very construction of these tough tubes keeps them free from splinters or chipping which would damage yarn fibres. Their great strength, in spite of power saving light weight, means a longer useful life on the spindles.

Other industry requirements for the perfect yarn carrier which A. P. T. Products satisfy, are: Perfect balance on the spindle, perfect spindle cling, resistance to distortion, free but controlled yarn delivery, and low ultimate cost.

Give these superior carriers a chance to improve the quality of your production and to reduce costs. They are adaptable to the spinning, twisting or weaving of all types of fibres.

AMERICAN PAPER TUBE COMPANY

ESTABLISHED 1898

WOONSOCKET, R. I. GREENVILLE, S. C.

SALES OFFICES IN NEW YORK AND CHICAGO

dice as exists against chlorides came from some troubles experienced many years ago when mills hot-calendered cloth containing high percentages of magnesium chloride, which is much less stable than the chlorides in use today. Calcium and zinc chlorides are stable well above a temperature that would be sufficient to char the cloth.

The necessity for fiber-laying is obvious to anyone who has seen breakouts due to tangled ends in a loom. Efficient fiber-laying is accomplished by use of the proper materials to give good adhesive qualities to the size film.

SIZE ANALYSIS IS A UNIFORMITY TEST. A few remarks are necessary on the subject of judging size compounds by analysis. Analysis is a valuable check on uniformity, but beyond that the ordinary analysis does not go.

Of course, a good size compound should contain gums, lubricants, and softeners, but the properties of these materials should be properly balanced to give the desired effect in sizing.

The reason most sizing compounds contain an amount of water is that the gums they contain must be maintained in a somewhat soluble state. Once they have dried out, the gums are very difficult to get back into solution, unless spread in the very thin films in which they occur on the sized yarn. Even then, gums derived from starch products may need enzymes or chemicals to bring them back into solution. Also, the preparation of many of these materials requires water for the chemical reaction. The reaction will proceed only in solution. It would cost more ultimately if the water were removed than would be saved in freight charges.

This is illustrated by the example of 4% solutions of three gums shown in Fig. 3. The first is a natural gum, locust beam gum. In a 4% concentration, it is so stiff that it will not flow. It has little adhesive quality. Its principal use is as a thickener, where greater viscosity is required, particularly in printing pastes. Sometimes, too, greater viscosity is desirable in sizing, in order that more size may be picked up at the same concentration of solids in the size.

The other two gums are produced from starch chemically treated. One is of medium viscosity, very adhesive; the other has a very low viscosity, fairly adhesive. It is evident that one of the greatest advantages of starch gums is that they can be prepared to give a certain viscosity at any concentration desired.

Many of the natural gums cannot be put into as concentrated solutions as are normally desirable for sizing purposes.

It is important to be able to vary

. . . for every Textile Job!

PROCESS WATER "MADE-TO-ORDER"!

Not just "any kind of water," but controlled, high-quality process water is a must in every textile mill today. For manufacturers know that new and better synthetic fibres and fabrics will play an increasingly important part in the textile industry's future. New equipment will be needed—new manufacturing methods—*even new process water!* More and more mill executives are relying upon modern Permutit equipment to create and control the quality of this new process water.

CUTS COSTS FOR HUNDREDS OF MILLS!

Impurities in ordinary water can easily disturb chemical reactions, causing spotty, off-color dye-lots, and spoiling the finish of fabrics. Permutit equipment removes these impurities quickly and economically. That's why Permutit controlled-quality process water cuts production costs—actually saves money —by safeguarding quality. For full information, write to: The Permutit Company, Dept. TW6, 330 West 42nd Street, New York 18, N. Y., or Permutit Company of Canada, Ltd., Montreal.

FOR 34 YEARS

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WATER CONDITIONING HEADQUARTERS

for KEENER COMPETITION

A NEW PRODUCTION CHALLENGE!

● The principal markets of today and tomorrow will go to the best-equipped, most efficient producers. Will your plant be among these leaders?

Modern equipment, the key to this new, highly competitive era, includes more than efficient machinery . . . it takes in every corner of your plant.

Consider valves, for example. Good valves are necessary for operating efficiency. LUNKENHEIMER VALVES meet every requirement, for dependable service. Proved through the years . . . in every industry . . . under the most exacting conditions, they deliver longer service at lower maintenance cost. Industrial users trust LUNKENHEIMER VALVES—know they combine carefully selected materials, advanced design and superior workmanship, backed by 85 years of valve manufacturing experience.

ESTABLISHED 1862

THE LUNKENHEIMER CO.

—"QUALITY"—

CINCINNATI 14, OHIO, U. S. A.

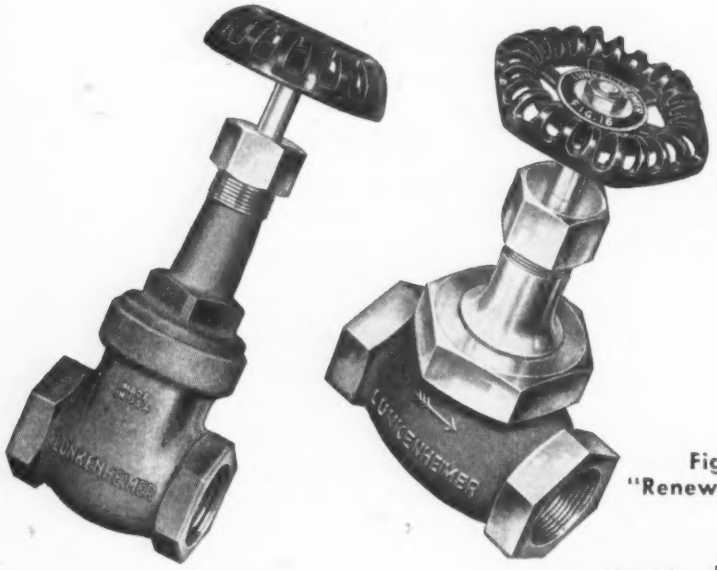

Fig. 16
"Renewo Globe"

Fig. 2125
Bronze Gate

And, backing up this high quality . . . insuring utmost satisfaction, is a nation-wide service organization. The next time you have a valve problem . . . installation, maintenance, repair or operation . . . call your Lunkenheimer Distributor. You'll find his service, like that of LUNKENHEIMER VALVES, truly dependable—always.

LUNKENHEIMER VALVES

BRONZE, IRON, STEEL, AND CORROSION RESISTANT ALLOY VALVES
AIR DEVICES, LUBRICATORS, AIRCRAFT FITTINGS

the adhesive properties of the gum. The medium-viscosity starch gum would give a film that would be too sticky for sizing use, and would probably ball up behind the reed and gum the harness.

Before the sizer knows how much of a gum he wants in his size, he will have to know something about the over-all effect it will produce on his size mix, whether it gives the proper viscosity, the proper amount of adhesiveness to lay fibers without gumming, the proper flexibility of finished size film, etc. Experience is a most valuable factor in determining this, and a good man in the slasher room can still do as well as, sometimes better than, the chemist in the laboratory. The chemist has the advantage that when he finds out what is wrong, he knows in what direction to move to vary the properties the way he wants them.

But the weave-room is still the ultimate test.

LUBRICANTS AND SOFTENERS. Another group of materials that is checked in every analysis is the so-called "fats." This term has come to include, in the minds of people using textile chemicals, not only the pure fats but also the many varieties of oils, waxes, and synthetic materials having lubricating or softening properties.

Lubricating and softening are not the same thing, but may often be confused because most fats act as both. However, it must be remembered that the properties vary considerably from one fat to another. Sulphonated fats are good softeners but poor lubricants; mineral fats are much better lubricants, but not nearly so good as softeners.

Pure beef tallow has some of both qualities, but is not ideal from either standpoint. Blends of other fats often surpass tallow in both properties, sometimes at a cheaper cost.

Tallow owes its position to the fact that it was one of the most readily available fats in the days when sizing began.

SAPONIFIABLE FATS. In analysis, fats are generally divided into saponifiable and unsaponifiable fats. Both kinds vary immensely in properties and cost. Although many persons judge the effectiveness of a size by the amount of saponifiable fats it contains, a "saponifiable fat" can vary in its properties. There is, for instance, tallow which can be either high-grade edible or low-grade inedible; and the analysis normally carried out will not distinguish between them. There are stearic acid and oleic acid—one a solid, the other liquid; fish oil, which is a very sticky oil and of no use at all for lubrication; and synthetic fatty ester,

"Struttin' in Cotton"

Made of Durene multi-ply mercerized combed cotton yarn
4 WAYS BETTER than ordinary cotton yarns
EXTRA COMFORT ---more absorbent
EXTRA STRENGTH ---longer wear
EXTRA QUALITY ---lasting lustre
EXTRA SERVICE ---easy to wash
* Reg. U.S. Pat. Off.

KNITWEAR OF Durene*

fine cotton yarn for superfine knitted outerwear, underwear and hosiery

NATURAL, BLEACHED, DYED AND MERCERIZED YARNS

ESTABLISHED 1893
aberfoyle
AMERICA'S OLDEST MERCERIZERS
Durene*

ABERFOYLE MANUFACTURING COMPANY
123 South Broad Street, Philadelphia 9, Pa.

NEOPHIL

Neophil, the Nylon Seaming and Looping Thread for Nylon Full-Fashioned Hosiery, made by the Premier Thread Co., Pawtucket, R.I.

MADE OF Wearwirst YARN MERCERIZED COTTON

—and in the South
ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina

Representatives in principal textile centers of the world

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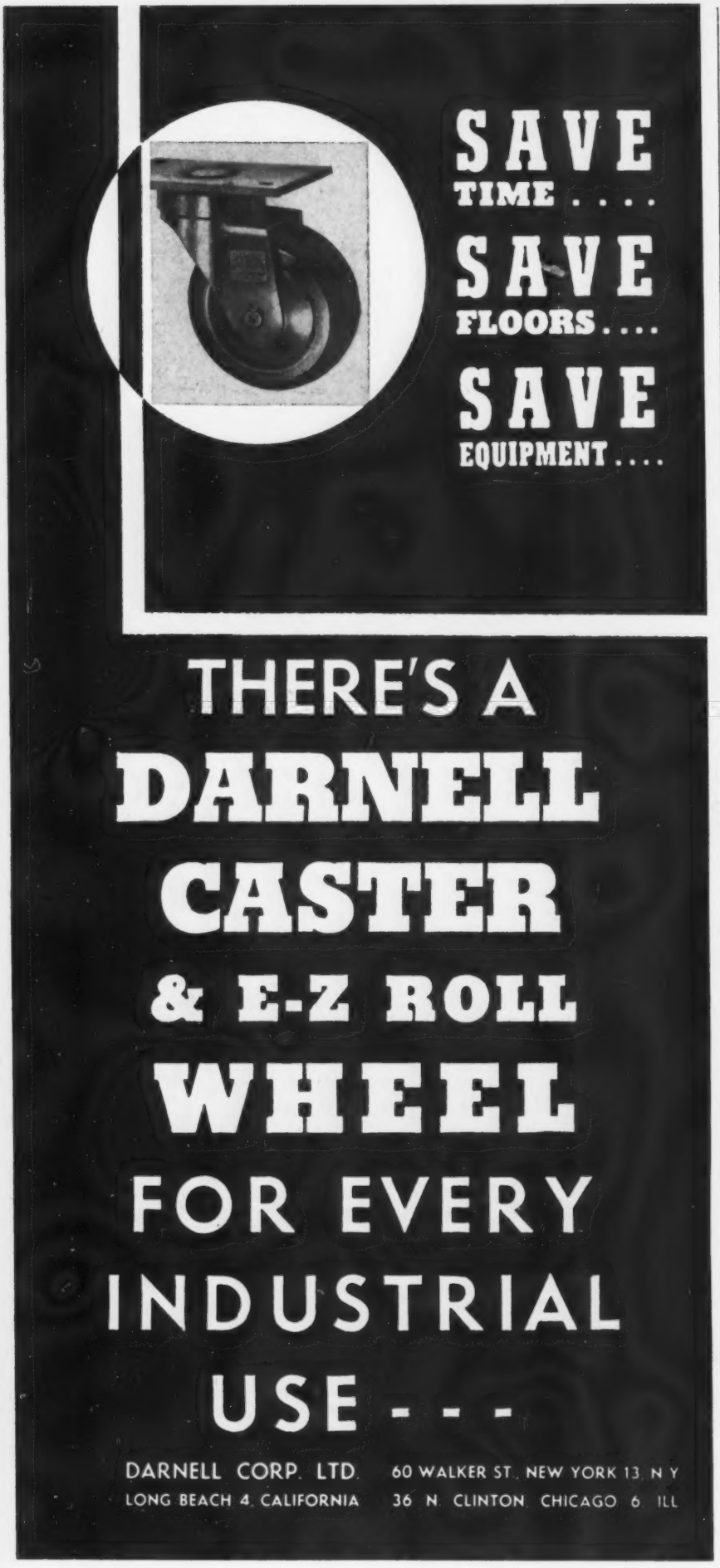


which is claimed to have four times the lubricating value of tallow. All these materials will show up in chemical analysis as "saponifiable fats," yet their properties differ.

In addition, there are samples of partially saponifiable fats: carnauba, candelilla, and bees' waxes—and cotton wax, itself, extracted from raw cotton. Some of each of these will show up in an analysis as saponifiable fats, some as unsaponifiable fats.

There is also linseed oil—a saponifiable fat, but one which will dry out on exposure to air to form an insoluble film, a characteristic definitely undesirable on sized yarns.

Among the "unsaponifiable fats" in addition to the unsaponifiable portions of carnauba, candelilla, cotton wax, and others, there are the mineral products: paraffin oil, kerosene, petrolatum, various paraffin waxes, each having different lubricating properties and softening effects, and cetyl alcohol. The latter, although unsaponifiable, is used to make high-grade emulsions, showing that lack of saponifying ability is no basis for judging emulsifying properties. Mineral products, properly blended with emulsifying agents, can be as emulsifiable as any saponifiable material.

Parenthetically, spots from mineral oils generally come from non-emulsified oils dropping from machinery bearings and containing dirt and fine metal particles. Properly handled, mineral oils have never given trouble.

Rayon-Fabric Singeing

(*Continued from page 113*)

ditions requiring high flame characteristics.

The fire checks are safety devices only. They are flame arresters and prevent back fire into the air-gas mixture mains.

The two carburetors are mounted on a platform suspended from the ceiling about 25 ft. from the burners. One carburetor is a standby usually for emergency use, but both are used during periods of high firing rate. The utilization capacity of these carburetors is 1,500 cu. ft. of gas per hour—gas being 550 B.t.u. regular commercial gas supplied by the Public Service Corp. of New Jersey. Gas from the supply line flows through a pressure governor set at the lowest pressure at which gas is ever likely to be supplied, so that, regardless of variation in incoming gas pressure, the gas will be delivered to the proportioning valve of the carburetor at a predetermined constant pressure. The proportioning valve gives a constant gas-air ratio, according to its setting.

Gas and air are drawn in together

The steam gauges tell how you can step up production with Lukenweld Jacketed Drier Rolls

(PATENTS APPLIED FOR)

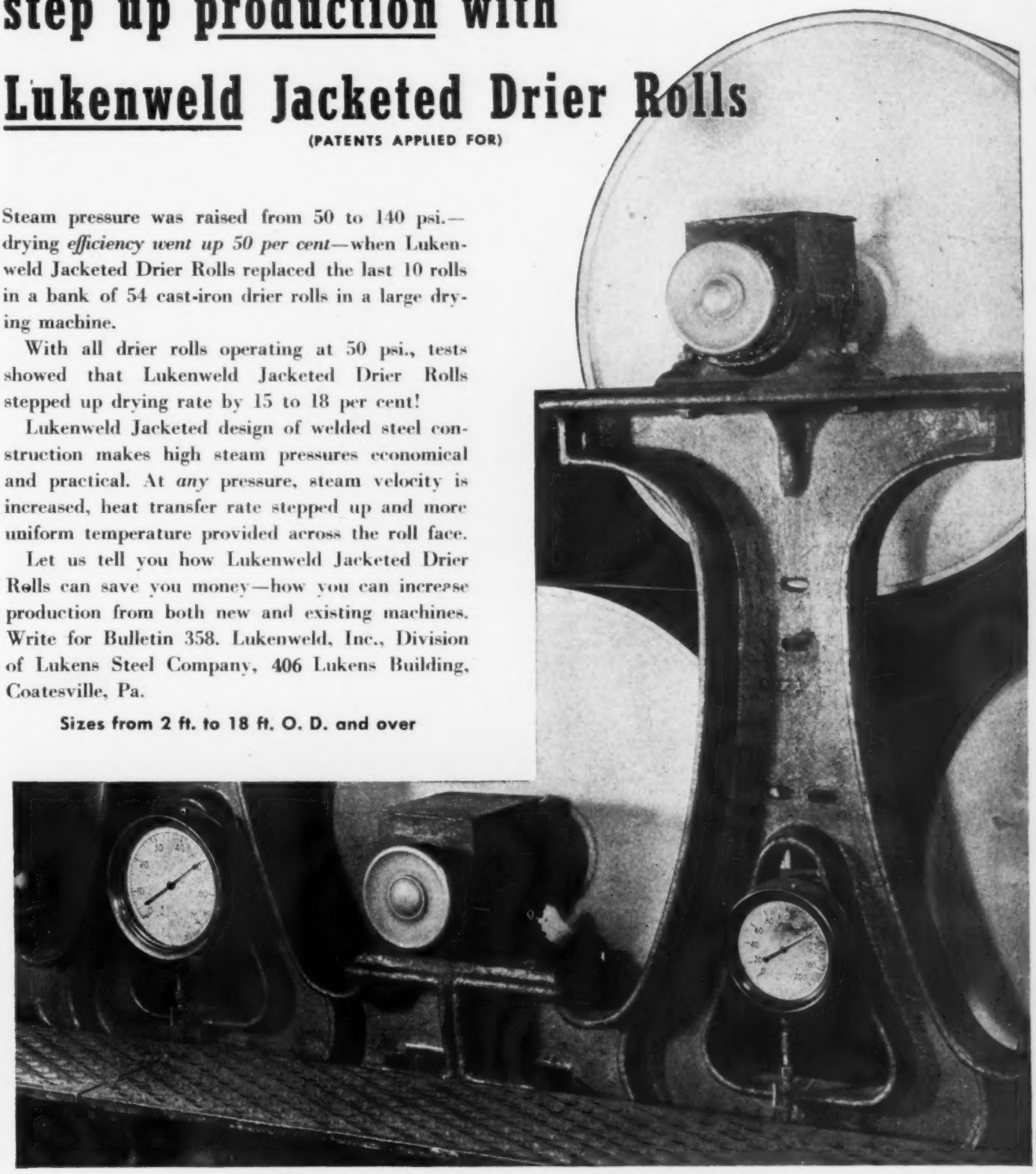
Steam pressure was raised from 50 to 140 psi.—drying *efficiency went up 50 per cent*—when Lukenweld Jacketed Drier Rolls replaced the last 10 rolls in a bank of 54 cast-iron drier rolls in a large drying machine.

With all drier rolls operating at 50 psi., tests showed that Lukenweld Jacketed Drier Rolls stepped up drying rate by 15 to 18 per cent!

Lukenweld Jacketed design of welded steel construction makes high steam pressures economical and practical. At *any* pressure, steam velocity is increased, heat transfer rate stepped up and more uniform temperature provided across the roll face.

Let us tell you how Lukenweld Jacketed Drier Rolls can save you money—how you can increase production from both new and existing machines. Write for Bulletin 358. Lukenweld, Inc., Division of Lukens Steel Company, 406 Lukens Building, Coatesville, Pa.

Sizes from 2 ft. to 18 ft. O. D. and over



Working surfaces of Lukenweld Jacketed Drier Rolls may be carbon or low alloy steel, solid stainless steel, Monel or other nonferrous metals, or clad steels.

LUKENS
LUKENWELD DIVISION

LUKENWELD, INC.

DRIER ROLLS AND DRYING MACHINERY FOR MORE PRODUCTION

HILD Floor Machines

Left—HILD Tank Type Shower-feed Floor Machine

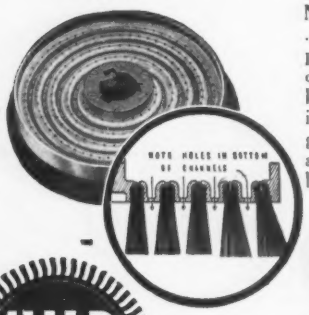
Right—HILD Plain Handle (Standard) Floor Machine

KEEP ALL YOUR FLOORS

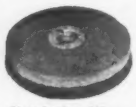
Clean **AND** *Slip-Safe*

HILD Floor Machines are designed for use with the easily interchangeable attachments pictured below to condition and maintain floors of all kinds . . . either in the mill or in office areas. Scrubbing with the Tank-Type Machine and the patented HILD Shower-feed Brush gets floors cleaner with less scrub-soap solution . . . cuts soap costs . . . does not splash water on machinery or furniture. Scrub-soap solution is fed from the tank on the handle of the HILD Floor Machine to the back of the Shower-feed Brush . . . then passes through accurately spaced holes penetrating the brush back between each row of bristles.

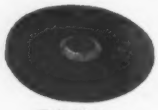
HILD Floor Machines speedily scrub open areas in lanes between machines . . . yet are easily guided into hard-to-reach spots under and around machinery. They are sturdily built for long, trouble-free service.



HILD Shower Feed Brush



Brush for Waxing or Polishing



Polishing Buffer

Steel-wool Pad and Holder

HILD System MAINTENANCE EQUIPMENT & SUPPLIES

***Write today for* FREE CIRCULAR**

HILD FLOOR MACHINE COMPANY

1313 W. Randolph St., Dept. TW6, Chicago 7, Ill.

ROBISON

RAYON YARNS

We continue to offer a flexible service combining superior workmanship in the

- **dyeing**
- **twisting**
- **throwing**
- **converting**

of filament, spun rayon, and nylon yarns.

ROBISON PROCESSING COMPANY

Boston, Massachusetts • New York Sales: 450 Seventh Avenue

through the proportioning valve by suction from a turbo compressor. The air-gas mixture is raised to a predetermined pressure by the turbo compressor and discharged through the fire check and on to the burners.

The new installation had been in operation a little over two months when this was written; and, while experimentation was still going on, the time required to singe cloth had been cut from a full-time, three-shift, 24-hr. operation to a 6-hr. operation. The speed at which cloth can be singed is limited only by design of the supporting framework and drive, and by the speed with which the cloth can be handled. To help overcome this latter limitation, an extra man has been added to help load and unload the machine. Although not yet realized, it has been estimated that a maximum practical speed will approach 400 yd. per min. At present, however, the speed is so much greater than that of the old system that the exhaust ducts have been redesigned to take care of the increased volume of burned nap.

In addition to the greater speed of singeing, only one pass is required instead of the previous two to four; and the one-pass, high-speed singe does a superior and more satisfying job than that achieved by the old method.

National Textile Seminar

(*Continued from page 133*)

The potentialities of solvent scouring and of pulling wool by use of enzymes are currently of considerable interest to Australian wool men, Mr. Whiffen said. He told of soluble brands now being used in Australia to overcome objections to tar brands. Yellowing of wool is being studied, and the American system of spinning worsted yarns is being considered.

NEW FABRICS. Wool was also discussed to a considerable extent by Dr. Donald H. Powers, director, Textile Chemicals Dept., Monsanto Chemical Co., in his paper on "New Fibers and New Fabrics for Old." His theme was that fabrics must now be poly-functional.

New types of fabrics highlighted by Dr. Powers were bonded-fiber webs [which he termed "non-woven" fabrics], metallic cloths, stabilized rayons, washable woolens, crush-resistant cottons, and unidirectional fabrics. Melamine-formaldehyde resins in aqueous solutions are used on the rayons, woolens, and cottons mentioned.

Interesting new all-wool fabrics were shown combining shrunk and shrunk-proof yarns. Seersucker and matelassé-like fabrics are among those possible

The "Staff-of-Life" in textiles . . .

fabrics and yarn that fill practically every conceivable apparel requirement for America's great volume market.

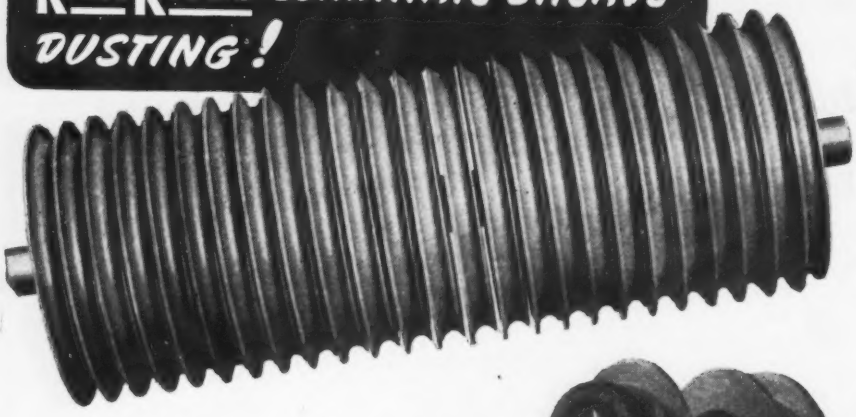
WILLIAM *Whitman* COMPANY, INC.

GENERAL OFFICES: 261 FIFTH AVENUE, NEW YORK 16, N. Y.

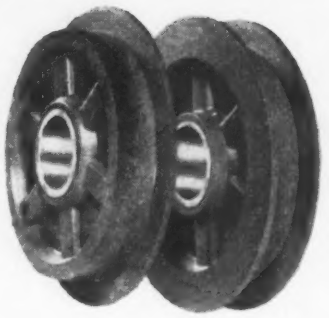
Cotton & Rayon Fabrics Division, 40 Worth St., New York, N. Y.

BOSTON: 78 Chauncy Street • CHARLOTTE: Commercial Bank Building • PHILADELPHIA: 1600 Arch Street
CHICAGO: 222 West Adams Street • LOS ANGELES: 810 South Spring Street

RUNRITES ELIMINATE SHEAVE DUSTING!



You'll find no dusting on fabric with RunRite Plastic Sheaves because RunRites are automatically spaced to prevent one sheave rubbing another. Their smooth, perfectly balanced strap surface guarantees longer life for harness straps. Once installed, RunRites need no further attention for a long life of perfect service.



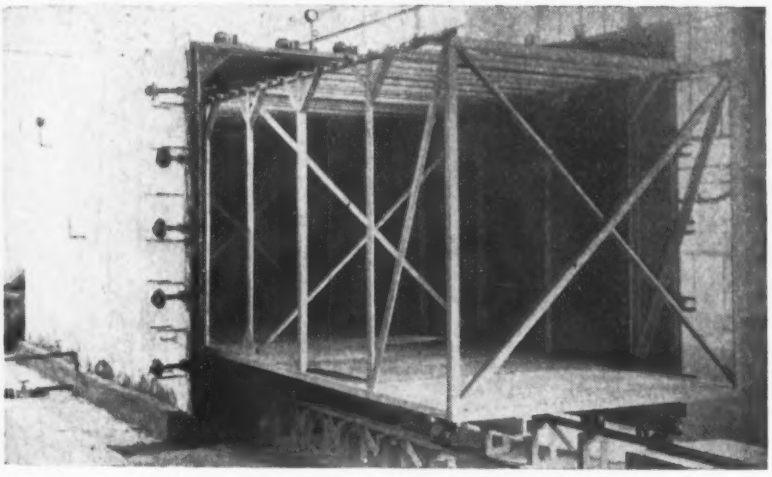
RUNRITE Trade Mark Plastic Sheaves

NATIONAL PLASTICS, INC. KNOXVILLE 2, TENN.

REPRESENTATIVES

EMMONS LOOM HARNESS CO., Lawrence, Mass. HENRY H. HERSEY, Greenville, S. C.
WATSON & DESMOND CO., Charlotte, N. C. HARRIS MANUFACTURING CO., Atlanta, Ga.

3 TIMES THE CAPACITY OF ORDINARY ROUND STEAMERS



The scientifically designed square construction of the

SOMERSET STEAMER

affords an enormous advantage over the ordinary round type. Its spacious interior is large enough to hold 100 pieces, resulting in speeding up steaming operations with maintained thoroughness. SOMERSET Products Include Agers—Washers—Steamers—Printing Tables, Stainless Steel Tanks and Other Textile Machinery

SOMERSET ENGINEERING CORP.

Tel Fall River 3-3223

Mailing Address—P. O. Box 402 Fall River Massachusetts
Plant at—1 Riverside Avenue Somerset, Massachusetts

with this new technique based on the new shrink-proofing processes. Stabilized knit goods from wool, cotton, and rayon are being achieved by means of chemical treatments.

INSTRUMENTATION. Without recording and controlling instruments much of our textile processing would either be impossible or prohibitively costly was the conclusion drawn from the presentation by Richard Pollock, Jr., textile-industry engineer, Brown Instrument Co.

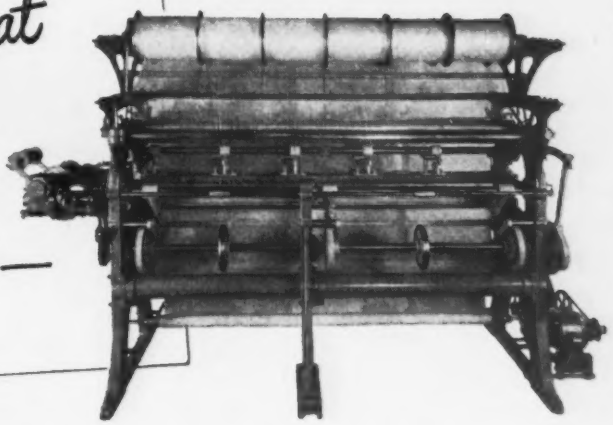
Instruments are particularly essential on finishing ranges such as on continuous bleaching. [See TEXTILE WORLD, April, 1947, page 119.] On a range with complete automatic control, the number of operators required can be reduced from six to two, he said. The trend today is to have many control indicating or recording instruments grouped—sometimes in the office of the chief chemist or dyer.

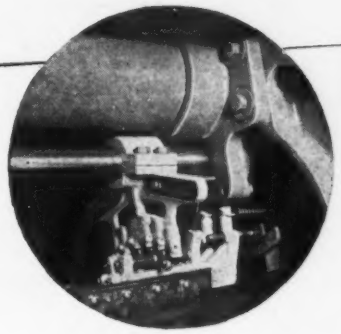
Mr. Pollock cited the example of a large mill which realized an annual savings in steam of $13,140 from instruments costing $8,000. He stated that "weaveroom efficiencies of approximately 85 to 90% will be increased approximately ½% with complete slasher-room instrumentation." Continuous, automatic control of pH he cited as now being possible with the more rugged instruments recently available. Electronic potentiometers were emphasized as useful in many textile processes because of their high accuracy (a fraction of a degree, if needed), rapid response, and their facility for measuring at a large number of locations.

RADIO-FREQUENCY HEATING. Applications of high-frequency heating to textiles are feasible only when they are faster or cheaper, easier to control, produce a better product, or when no other means are possible, according to Dr. George H. Brown, research engineer, Radio Corp. of America. He told of drying rayon cakes in a vacuum in 20 to 30 min. at 110° F., but the cost would be from 3 to 5¢ per lb. of water removed and was, hence, not economically justified. About the only commercial application of radio-frequency heating in textiles is in the setting of twist in large cones of tire cord. For such work, a 15-kw machine will set 17,000 to 20,000 cones per day, he claimed.

Induction heating, however, has been used to the advantage of the textile industry in the manufacture of machines, supplies, and parts. Dr. Brown told of using such methods for heat-treating of spring-beard knitting needles. Among the trial applications of dielectric heating was one for de-

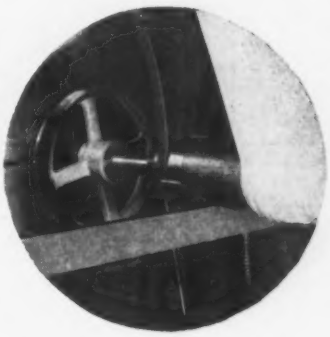
Three of the features that make the Kidde Knitter the leader in Raschel-type machines—

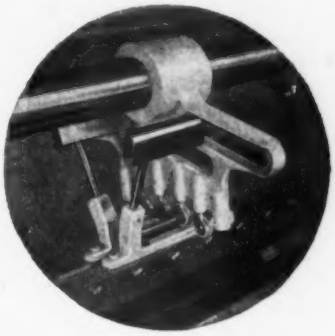




Guide Bar Assembly. On the *Kidde* Knitter, guide bar assembly can be raised or lowered as a unit by loosening four bolts that hold assembly to end frames and setting adjusting screws. Assembly is hung on supporting tube 6" in diameter, with ½" walls, assuring absolute rigidity under all conditions of load and speed. Swing bar is made of 1-15/16" diameter steel shafting to prevent torsion.

Cloth Roller. By simply removing a single bolt on each end, the cloth roller is released and rolls out from under the machine on a track. An empty roller can be quickly inserted so that down time is at a minimum. On double needle bar machines, where a front leg is supplied, the leg is hinged to permit removal of the cloth roller.





Guide Bar Hangers. Six guide bar hangers provide six-point suspension on guide bars and assure rigidity. Up to six guide bars may be used — each may be adjusted individually. Guide Bars are supported in the hangers by self-aligning bearings — torsion rods are provided at each of these six points to maintain guide needle alignment even with tightly stretched elastic yarn.

These are just three among the many reasons why practical Raschel men recognize the *Kidde* Knitter as the last word in warp-knitting machines. Exceptional accessibility, wide versatility, high sustained operating speeds — these advantages make the *Kidde* Knitter outstanding!

Write for descriptive literature—or better still, see for yourself what the *Kidde* Knitter can do. A machine is in operation at our Bloomfield plant—we'll be glad to arrange a demonstration. Just write for an appointment.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

Not One Drop of Condensation to damage material with "H-W" CONDITIONER

The "H-W" CONDITIONER prevents harmful ceiling drip . . . protects products against condensation damage because every detail of construction is engineered for complete safety of material being conditioned. Patented design assures uniform distribution of vapor-laden air as well as absolute automatic control of temperature, humidity, and time of operation . . . with all the material receiving exact, uniform treatment.

H-W CONDITIONER for cotton showing yarn being handled in slatted, wooden truck.

Write for Bulletin UC1 which explains Yarn Conditioning and "H-W" Equipment.

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curling selvages of acetate-rayon tricot fabrics.

TRICOT KNITTING. Comparisons of tricot knitting with weaving and circular knitting were made by Thomas H. Johnson, manager of the Aveco Sales Dept., of American Viscose Corp. He pointed out that tricot knitting, although cheaper than weaving (¾¢ for tricot direct-labor costs compared to 2½¢ for weaving), has a price advantage only when the yarn costs are approximately the same. When tricot fabrics must use yarns much higher in price, largely because they are finer, they cannot compete.

In comparing tricot fabrics with circular fabrics from high-production machines, Mr. Johnson said, "It is hardly conceivable that these machines can be made to suffer cost-wise by competition from any other presently known method of making fabric. The opportunities for tricot cloths to replace circular-knit fabrics seem to be chiefly in the preference for the qualities of the tricot constructions for certain uses."

Mr. Johnson foresaw a three-fold expansion in tricot knitting in ten years.

WASTE UTILIZATION. Although he prefaced his remarks at the seminar by saying that there was "nothing new in the waste business for 50 years," William H. Jones, vice president of Railway Supply & Mfg. Co., told of research to find additional uses for textile-mill wastes (chiefly cotton waste from cotton mills) and of studies in mills concerning the mills' waste problems.

One study in a combing mill showed that in a 50-week period the mill opened 7,500,000 lb. of cotton and had 2,600,000 lb. of waste (35%). Total cost of the waste was $992,000, none reworkable. After resetting standards, there was a 6.71% reduction in waste. Savings were $180,600 annually. The study revealed that slasher waste was 2.53% when it should have been 1.6%; white cap thread waste was 2.12% when it should have been 0.75%; card fly waste was 1.58% when it should have been 0.80%; card strips, 5.06% compared to 4%.

Ben H. Crawford, of Southeastern Engineering Co., who was on the same portion of the seminar program with Mr. Jones, stated that over-all waste percentage figures for a mill are almost meaningless. They give no indication as to either the value or the cost of the waste.

Answering a question from the floor, Mr. Crawford told of a test involving 72 cards, half of which were set to remove lean waste and half fat. The two settings revealed no noticeable difference in quality, he claimed. It was

HOW WOULD YOU PRINT THIS PATTERN ON COTTON DRESS GOODS?

To produce this dainty dress-goods pattern, Rock Hill Printing and Finishing Company, subsidiary of M. Lowenstein & Sons, Inc., selected Aridye* Pigment Colors. Rock Hill executives knew from experience that this was by far the simplest method and would have several other important advantages as well. The printing order and formula for each color were as follows:

YELLOW—Aridye Yellow FY2G 4832 cut 1:8 with Aridye Clear 6214; PINK—Aridye Red FD2B 4302 cut 1:48; GREY—1½ parts Aridye Black FK 4214 and 1 part Aridye Blue FC2G 4720 cut 1:60; BLACK—18 parts Aridye Black FK 4214 and 1 part Aridye Blue 4720 cut 1:1¼; GREEN—4 parts Aridye Green FJB 4110, 8 parts Aridye Yellow FY2G 4832, and 1 part Aridye Blue FC2G 4720 cut 1:10.

The fabric was merely printed, dried, and finished, no ageing, soaping, or other after-treatment being necessary. Note particularly the clean, unbroken outline, and the closeness of register which was easily maintained due to visibility of the color during printing. Fastness to light and laundering met or exceeded all requirements for fine cotton dress goods.

Because they obtain results such as these, Rock Hill and other leading printers have changed to Aridye Pigment Colors for solving difficult problems and for better everyday printing jobs. Interchemical technical representatives, experts in the printing of cotton, rayon, and other natural and synthetic fibers, are available to help you solve *your* printing problems. Write to Interchemical Corporation—Textile Colors Division—*pioneers in pigment colors for textiles*—P. O. Box 357, Fair Lawn, N. J.

*Reg. U. S. Pat. Office

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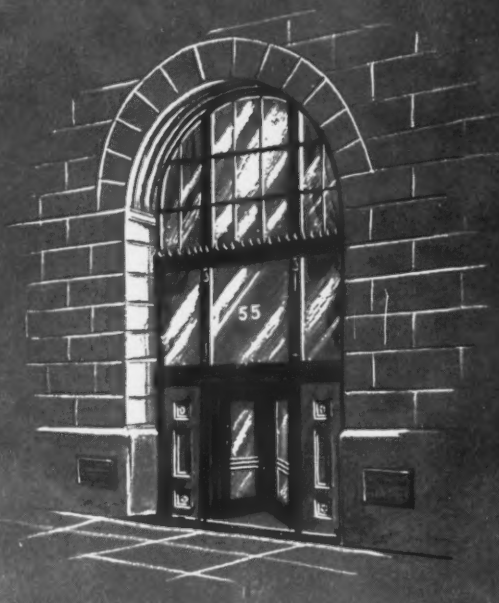
Uniformity of Shade • Fastness to Washing
Bright Colors • Economy
Ease of Application • No Impairment of Hand

Aridye *Pigment colors*

INTERCHEMICAL CORPORATION • TEXTILE COLORS DIVISION • FAIR LAWN, N. J. • ROCK HILL, S. C. • PROVIDENCE, R. I.



TEXTILE BANKING COMPANY

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Factoring Service

Puts your sales on a cash basis
Strengthens your cash position
Relieves you of credit losses

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brought out by Mr. Jones that the use of synthetics in cotton mills is complicating the problem of utilizing waste.

PLASTIC FILMS. David S. Plumb, of the Technical Service Dept. of Monsanto Chemical Co., said that although statistics on the amount of supported and unsupported plastic films are not entirely reliable, they do amount to considerable yardage. He dwelt principally on vinyl chloride and its copolymers such as vinyl butyral and polyethylene. "In the fabric-coating field," he reported, "the older materials such as nitrocellulose, rubber, oils, and alkyds are being supplemented with vinyl resins. Vinyl chloride and its copolymers make up the bulk of these coating plastics; but a second vinyl resin, vinyl butyral, has the extraordinary property of ability to form a coating over cloth, which, while being durable and effective, is practically invisible."

VERTICALIZATION. Royal Little, president of Textron, Inc., and Jackson E. Spears, vice president of National Mallison Fabrics Corp., apparently agreed at the seminar that there was a place in the textile industry for both converters and integrated set-ups; but the agreement was in principle, not necessarily in form. Mr. Little revealed that Textron's plan was eventually to sell all of its production under the Textron label as consumer goods. Both speakers agreed that an integrated organization would have difficulty in merchandising high-style garments.

Regarding styles, Madeliene Darling, fabrics editor of Vogue magazine, told of styles which should help the market for textiles. She referred principally to longer skirts. O. E. Schoeffler, fashion editor of *Esquire* magazine, stated that for men's styles he followed the men who are acknowledged style leaders, college men, and Hollywood stars.

Ferdinand K. Thun, of Berkshire Knitting Mills, also touched on the influence of fashion, particularly on full-fashioned stockings. The trend toward blacks and bright colors to match a woman's ensemble should increase the number of pairs of stockings bought by women, it was felt. Mr. Thun said that the market for full-fashioned nylon hosiery was leveling off at around 40,000,000 doz. pr. per year. He was very critical about the government's handling of silk and said, "It is a crime the way the silk situation was kicked around. If the government had been trying to kill silk, it couldn't have done a better job."

Mack Gordon, president of the Lindner Coy Co., Cleveland, urged studying of the buying habits of the

The Fleet Line
STOCK DYE KETTLE

The Fleet Line Stock Dye Kettle has become practically standard equipment for the dyeing of raw wool of all types as well as rags and clips. It is also widely used for the dyeing of all types of rayon, both staple and filament, as well as cotton. Advantages are as follows:—

1. Stock undisturbed in kettle. Comes out in open, lofty condition.
2. Complete and uniform penetration of dye liquor.
3. Stock unloaded in cake form on false bottom, by electric or air hoist.
4. Temperature, pressure and depth indicators.
5. Safety sampling cover. Will not open when machine is in operation.
6. Unit construction keeps outside pipes and fittings to minimum.
7. Vertical pump requires no packing.
8. Vertical motor on top of machine away from water and dirt.

Most of these features are EXCLUSIVE with Riggs & Lombard and are protected by Patents Nos. 2410214, 2275818 and 1813784, registered at the U. S. Patent Office.

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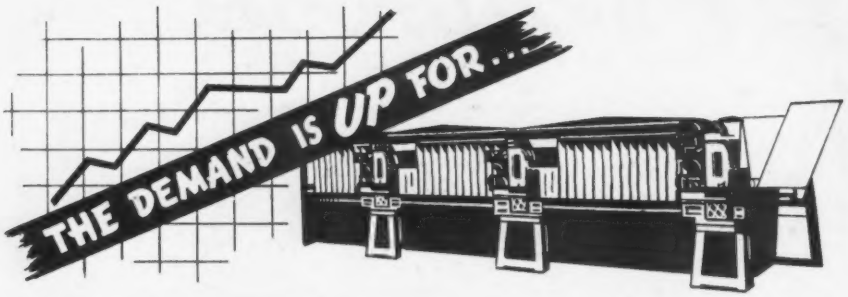

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Demand of the textile industry is up for Drummond Soap Flakes! And no wonder. These easy to use and quick sudsing flakes possess the same formula features of Drummond Soap—well known in the industry for years.

Now you have your choice, Drummond Soap Flakes — or Solid Drummond Soap!

Both have the advantages of high body and low alkali content — advantages that leave fabrics clean with a downier feel, brighter colors, and whiter whites. Try a sample and note the difference.

Write today for your FREE working sample of Drummond Soap — just ask for Flakes or Solid.

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G. TANGUAY
281 Harris Ave., Woonsocket, R. I.

country in regard to textiles. Ernest A. Jones, of McManus, John & Adams, Detroit, told how the automotive industry studied its markets and produced to meet them.

LABOR AND EDUCATION. Harold W. Whitcomb, divisional vice president of Marshall Field & Co., and William D. Fales, head of the textile school of the Rhode Island School of Design, discussed textile education and emphasized the need for a more rounded scholastic training and the need in mills for a better training program and utilization of textile-school graduates.

Lewis B. Schwellenbach, Secretary of Labor, gave his views on industrial relations; but his schedule did not permit him to hold the discussion period which followed the seminar procedure. Instead, Solomon Barkin, of the Textile Workers Union, also spoke and answered questions at the next session. Mr. Barkin stated that the situation for workers was quite different from that for employers in that the individual worker must be subordinate to the group. "Man rises by bringing everyone up with him. The accent is not on the individual but on the group," he said. He was not sympathetic toward job evaluation nor rating systems. In speaking of industry-wide bargaining, he said that it was "too good for industry to give up."

Worsted-Fabric Defects

(*Continued from page 115*)

produce this stripe without special precautions are obvious.

With the simplest lace line, an improvement in clarity is made, and better weaving is furthered, by always entering the two decorative threads together and, where it is possible, placing them next to the reed dent.

STAPLING OR LOOPING. When styles are used which call for a considerable number of fine ends crammed into as small a space as possible, some of the ends may form small loops, or stitchings, together with filling loops over the ends, since they lift and fall so closely together. Here again, the remedy often lies in a rearrangement of the draw or reeding and an adjustment of the decorative tensioning. After the material is finished, the careful use of colored dyes with a fine pen may take out or disguise some of these flaws.

Among other miscellaneous warp damages, streaks may sometimes be found that commence a few feet from the end of the piece and increase in width and intensity to the end. These are caused by the tieing of too many

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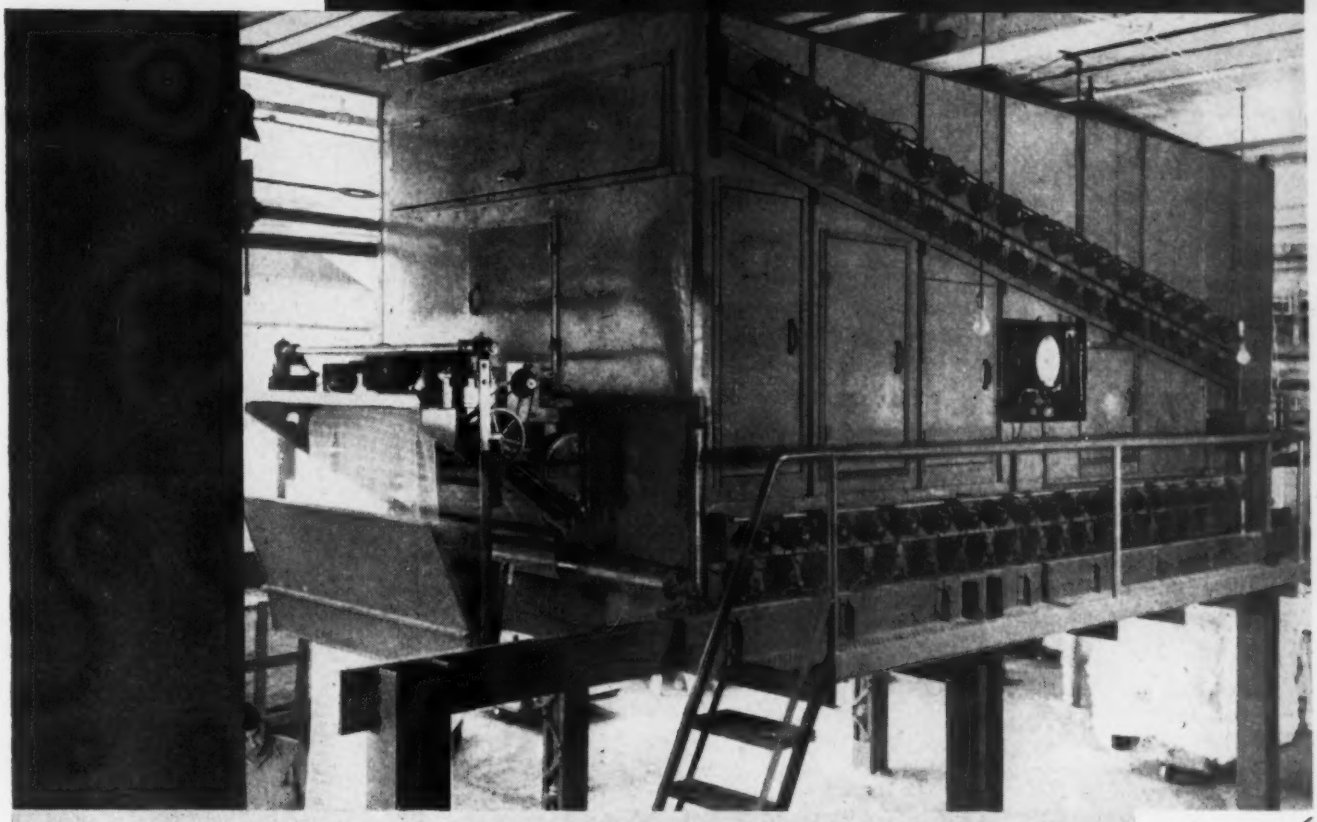
FOR CURING RESIN TREATED FABRICS



PROCTOR *Roller* CURER

The Proctor roller curer, illustrated, is in daily use in curing curtain material, an application to which this machine is ideally suited.

The material to be cured is conveyed through the curing chambers by means of individually motor driven rolls. This method of conveying is especially effective in the handling of light materials, such as marquisette. It holds the goods taut without tension, for the speed of the rolls varies with even the merest suggestion of tension. The material is carried through the machine at high speeds and subjected to temperatures of about 350°F. The heating medium in this machine is gas, although the same high temperatures can be obtained with high pressure steam. Individual analysis of cost and other factors involved make it possible to determine which of these two heating mediums is most advisable in any particular case.

In the particular installation shown, the curer is "suspended" from the ceiling—or elevated from the floor, in such a way as to provide working space beneath. Such an arrangement is ideal where floor space is at a premium, and is another example of how Proctor equipment is individually designed to meet specific plant requirements.

If you are engaged in the production of resin treated fabrics, you should investigate this and other Proctor equipment that may help you to a more efficient curing job and less cost. Write for details today.

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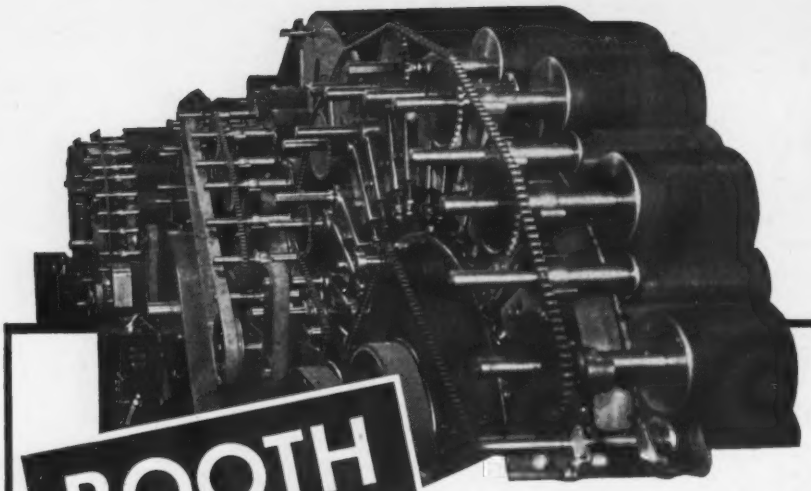
PROCTOR & SCHWARTZ INC



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R.D. COLE MFG. CO. ESTABLISHED 1854

Newnan Ga.

ends in one bunch on the beam rod or by insufficient tapes to pull the warp as the last of it is woven, and their dragging against drop-wires and heddles.

Even the burling and mending departments may produce some flaws, particularly by a too vigorous rubbing of the cloth after lengths of yarn have been sewed in. This will cause a displacement of the fibers, especially in single-filling fabrics.

DAMAGE RUNNING HORIZONTALLY. Bars of all kinds are the principal defects found in the filling and may be caused by a variety of mechanical and material failures. Broken teeth in gears, for example, will cause the beam to stop delivering yarn once in every revolution of the damaged gear; every time the beam is stopped in this way, tension will increase across the entire warp and a bar of too many picks will be formed. The same fault can be observed at more irregular intervals when there is a catching or slipping of rope-friction let-offs or when any other mechanical fault allows interference with the regular let-off of yarn and take-up of cloth.

Bars formed in this way are usually of only short duration and can be recognized as mechanical faults by their patterned, almost identical repetition, at gradually decreasing intervals. Bars caused by mixing bobbins of different lots will usually be recognized by the fact that the size of the bar corresponds to the length woven from a full filling bobbin, though this also varies with the number of shuttles in use. They may also be recognized by the appearance of the short end of filling at the selvage, which denotes a transfer.

Some of the bars hardest to eliminate are those which appear throughout the piece at irregular intervals, in all widths from a few picks to several inches, and with no preference for any particular loom. Although it is hard to prove, experience seems to show that many of these bars, particularly in piece-dyed cloths, are partially the result of a variation in moisture content between the exterior and interior layers of packaged yarn. Some of the yarn is thus unevenly stretched and the varying resultant tensions, while they are invisible in the gray state, may show up as bars when the yarns swell and relax during finishing. Another cause may be the use of inferior spinning oils which become somewhat rancid in such portions of a bobbin or cone as are exposed to strong light. When the material is dyed, the color will then be absorbed in varying degrees and peculiar bars will be formed which

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During the last few months, credit losses have been greater than in any month since 1941.

ARE PAST DUE ACCOUNTS INCREASING?

Studies show that past due accounts are greater today than in any period since 1941.

HAVE YOU RECHECKED YOUR CREDIT RISKS?

Continued rechecking of credit risks may prevent unexpected loss due to changing inventory values.

WHERE ARE THE LARGEST CREDIT LOSSES?

Records show that the largest credit losses are often the result of extending credit to customers who enjoy unlimited confidence and yet furnish limited information.

WILL YOU SUFFER HEAVY CREDIT LOSSES?

The facts show that credit losses are back. Yet, you can eliminate your chance of loss now by letting James Talcott, Inc., purchase your accounts receivable and thereby assume the risk. And what's more, factoring your accounts will give you additional operating capital, if you need it, and more time to devote to the problems of buying, manufacturing, selling and distributing.

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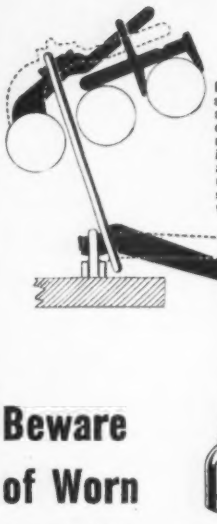
Exaggerated diagram shows how saddle assembly becomes worn, changing the weight ratio. Dotted lines indicate position of assembly when it is new. Heavy lines show position when worn.

Beware of Worn Saddle Assembly

IT CHANGES THE WEIGHT RATIO

As every spinner knows, accurate and uniform weighting of saddles is essential to uniform spinning. But accurate and uniform weighting is impossible with saddles, lever screws, levers and stirrups (the entire assembly) worn so as to prevent further adjustment.

Inspect your saddles at regular intervals and replace worn ones with Dixon saddles—the best you can buy.

"It costs so little and saves so much."

LOCK-IN SADDLE

Has device for oiling top rolls with very little attention. May be used to weight all three rolls or (by reversing back saddle) to weight front and back rolls only. One of many different types that we offer for regular or long draft spinning.

Lever screws in stock.

DIXON LUBRICATING SADDLE CO.
Established 1876
BRISTOL, RHODE ISLAND, U. S. A.

Sole Manufacturers of
DIXON
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do not necessarily extend across the piece width.

OTHER BARS. Less serious because they are more infrequent, other types of bars may be caused by bad starting up after picking out or by the stretching of yarn when full tension is left on the warp during week-end or vacation stoppages. Picking out is often a fruitless task, for if many picks have been extracted a bad starting may only substitute a fresh defect for the one that has been removed.

Among a multitude of other defects which arise in weaving, a few others are kips, filling curls at selvages, and side shadiness. This last flaw appears when the whip rolls are lower on one side than the other, when temple marks are caused by faulty rings, etc., or when uneven beat-up arms or unbalanced shafts make the warp yarns press down on the race-plate at one side. It may also be found when the warps have not been properly placed on the beam and therefore drag the yarns as they enter the drop-wires and heddles.

It should finally be noted that yarn-dyed black filling is probably more responsible for the appearance of these bars than filling of any other shade. The cause of this is that most yarn and top dyers make a common practice of dyeing batches black which have previously been rejected as off shade in other colors and thus produce greenish blacks, brownish blacks, etc., which are not true matches. Excessive redyeing and putting into black is also responsible for much weakened and tender yarn.

DYEING AND FINISHING FAULTS. Setting aside such faults as stains, holes, mill creases, etc., two main classes of defects may be established: yarn or processing faults and damages caused in finishing. Although casual inspection may not reveal in which class a given fault belongs, the distinction can be made by tearing the cloth at the point of damage. If the fault is in manufacturing, the mark will usually run exactly parallel with the tear; with apparently identical dyeing or finishing flaws, the fault will be seen to cross and recross the lines of warp and filling. Some of these latter faults are discussed below.

In yarn-dyed worsteds, it has been proved that long, straight streaks throughout a piece are caused either by small accumulations of flock waste beneath the cloth in shearing or by irregularities in the blade or bed which leave lines of higher fiber. In cloths that have a light warp and a dark filling yarn, providing an extreme con-

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The name that means leadership in
CHEMICAL SPECIALTIES
for the
TEXTILE INDUSTRY

"Always Reliable"

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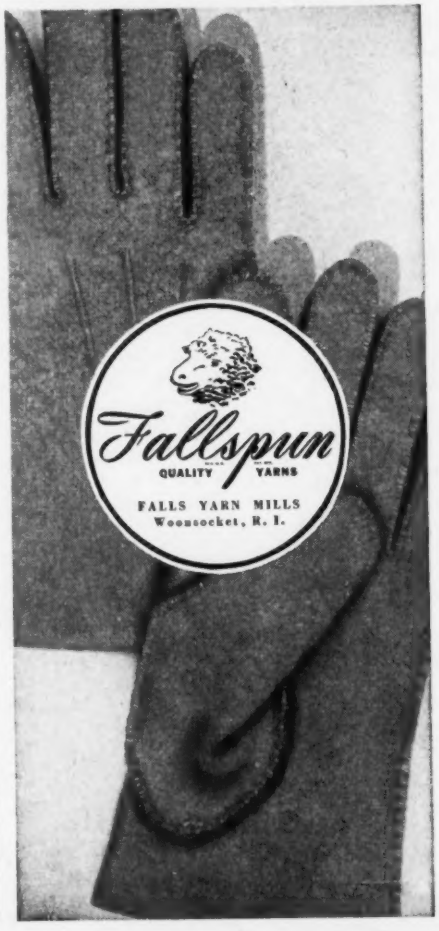

When a lady tells in glowing terms of the lovely fabric that meant so much in her choice of the perfect evening gown—a fabric processor knows instantly exactly what she means! For he knows, as she does, how important a part a fine, perfectly processed fabric plays in her ultimate picture of beauty.

That explains why so many of America's leading mills, converters, finishers and dyers have turned to Colgate-Palmolive-Peet for high-quality wetting, fulling, scouring and dispersing agents.

Remember, there is a C.P.P. soap or synthetic detergent for every type of fabric—for every processing problem. Ask your local Colgate-Palmolive-Peet representative for details. Or, write to Industrial Department, Colgate-Palmolive-Peet Company.

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1041-43 FRANKFORD AVE.
PHILADELPHIA 25, PA.

trast, this is a serious fault. The poor removal of sheared fibers from dark-gray-mixture cloths may occasionally be responsible for the common complaint of dirt rubbing onto shirt collars, etc., though this situation is usually the result of loose color in the original dyeing.

Shading side-to-center and end-to-end often is not caused by uneven dyeing but by uneven drying of an excessive moisture content. This irregular drying produces an appearance of shade variation which may disappear in later making-up.

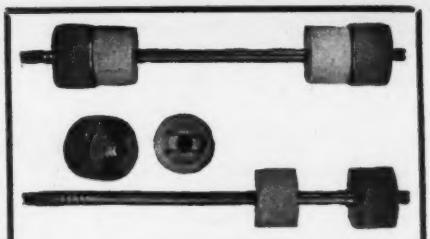
SHADE BARS. Flaws which resemble narrow filling bars may be caused by an overlong storage of gray cloth in folded form. If exposed to dirt or atmospheric fumes when dyed or finished, the material may develop a bar which coincides with the fold edge, either as the result of ingrained dirt or chemical reaction.

Mill creases and rub marks usually appear when a cloth has been allowed to run too long in rope form without opening out; such diagonal creases are almost permanently impressed and are accompanied by fiber breakage. Rub marks are caused by cloth jamming and sticking between rollers.

Small, vertical crimps may be the result of an uneven swelling of the fibers. This is a danger whenever blenders attempt to meet prices by blending together different wool types in the same top.

Wrapper marks may produce barred and embossed effects toward the end of a piece.

DIAMOND AND BASKET EFFECTS. Many pieces of rayon-and-wool-mixture tropicals have been rejected for this fault, in which the plain weave ground appears covered by variations of weave effects. It is a particularly common fault where wiry two-ply warp and filling yarns with a fairly high twist are used. Many mills have been persuaded that the fault is a weaving or preparatory one and have believed it to be the impression of the patterning of the sand-roller fillet on the lightly woven cloth. It can be definitely stated that this is rarely true. What probably happens is that a relaxation of twist produces an optical illusion of diamond patterning and that this is caused by the opposing angles of twist in the single components of the two-ply yarns used. If the gray cloth is "set in the gray" by a decating, crabbing, or blowing treatment before passing on to any other process, the twist and weave will remain fixed and the pieces will then in most cases be entirely free from damages of this type.



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Adaptable to long or short bobbins . . . spacers are self-locking and removable. Spindles made to your specifications so you can use two different length bobbins on the same spindle, on the same machine, without changing the spindle.

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If you are interested in bleaching, dyeing and finishing textiles, Hooker can supply many of the chemicals you need. Your work will be made easier, your operations will run smoothly and your product will be of uniform high quality when you use Hooker Chemicals.

Careful control combined with specially developed manufacturing techniques of Hooker Chemicals assures you of uniformly high quality in every shipment to your plant.

Listed below are some of the Hooker Chemicals that are serving the dye and textile industries. These and many others are listed in the Hooker General Products List, Bulletin 100. Technical data sheets are also available describing each product more completely. Just write "Bulletin 100" and the names of any products on which you would like more information on your letterhead and sign your name. The literature you want will be on its way by return mail.

PRODUCT *Chemical Formula:* *Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Aluminum Chloride Anhydrous $AlCl_3$; 133.3	Aluminum Chloride.....98.5% Min. Iron.....0.05% Max. Non-sublimables in air at 950°C, 1.5% Max.	Catalyst in synthesis of dyestuffs and intermediates.
Benzoic Acid-USP and Tech. C_6H_5COOH; 122.1	Benzoic Acid.....99.3% Min. Water.....0.2% Max.	Manufacture of dyes. Mordant.
CP—70 $C_{24}H_{39}Cl_{11}$; 1063	A chlorinated paraffin resin in powder form. Soluble in aromatic solvents, difficultly soluble in mineral spirits. Chlorine.....71 ± 2% Iron.....0.01% Max. Softening range.....90° to 100°C	Treating textiles to make water, fire and mildew-proof.
Lauryl Pyridinium Chloride C_5H_5N ($C_{12-8}H_{26-2}$)Cl; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12})...85.0% Min.	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Orthodichlorbenzene $C_6H_4Cl_2$; 147	Clear, colorless liquid. Freezing Point.....−10° to −22°C Boiling Range.....6° including 179°C	Manufacture of pyrocatechin, dye intermediates, other synthetic organic chemicals. Degreasing wool.
Sodium Sulfhydrate NaSH; 56.1	NaSH.....70 to 72% Fe.....5 ppm Max. Na_2S.....0.25 to 2.5% NaCl.....0.4 to 0.8% Na_2SO_3, $NaHCO_3$.....0.04 to 0.4% Cu, Ni, Cr, Mn, Pb.....1 ppm Max. Water of crystallization.....28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S.....60 to 62% Fe.....8 ppm Max. NaCl.....1.5% Max. Other Na Salts.....2.0% Max. Cu, Ni, Cr, Mn, Pb.....1 ppm Max. Water of crystallization.....36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

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New York, N. Y. Wilmington, Calif. Tacoma, Wash.

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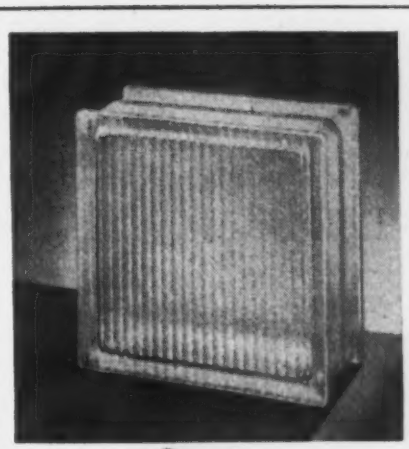

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Against GLARE, DRAFT, Sun HEAT

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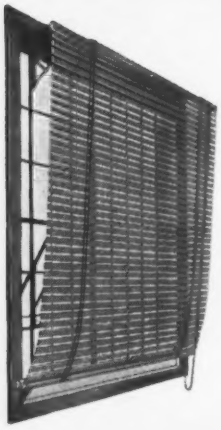

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WOOD SPLINT VENTILATING
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RA-TOX Shades allow Finger Tip Control of light, Shade and Ventilation, that is: LIGHT without glare; SHADE without darkness; VENTILATION without drafts. Will help maintain high humidity so necessary in weave rooms, as wood splints act as insulators.

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RA-TOX FLOOR MATS are made entirely of treated and stained hard-wood links. Made to stand hard usage. Stock or special size.

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European Machinery Ideas

(*Continued from page 127*)

Schweiter introduced a revolving top plate to be used in the winding of cakes. This device appears to ease the yarn delivery and is effective in processing cakes having a faulty formation.

European textile manufacturers do not enjoy the advantages of mass production, and consequently, while they warp from cones at high speed, they seem to be unable ever to get runs long enough to warrant the use of magazine creels. Their preference is to have a high-speed warper serve several creels. A piece of equipment which fits rather well into this European setup is a high-speed, section-beam warper developed by Fontana-Lagano, Italy. This warping head is made of two sections—one, stationary, comprising the drop wires, expansion comb, leasing device, etc.; the other, movable on rails and consisting of the beam-driving device. The obvious advantage of this two-part warp head is to enable operators to take care of the general creel dressing without immobilizing the beaming device.

Ruti has launched a high-speed, section-beam warping head of which the driving drum, attached to swinging arms, recedes from the warp beam as it grows in size. This procedure is the reverse of what occurs on conventional warping heads where the beam is driven by a friction drum. In the Ruti warper, a weight is used to maintain uniform contact with the warp. There is also a take-back mechanism which permits unrolling fully 2 yd. from the beam, thus making it possible to retrieve broken ends even though they have already reached the beam.

Benninger of Uzwill, Switzerland, offers a warping spindle equipped with magnetic brake, suitable for straight creel which allows warping crepe yarns from parallel tubes or spools at 140 yd. per min. The tension of all spindles is controlled by a central station located on the warper. When a stop occurs, the brake action is so increased as to prevent the formation of slack even though the stop may be abrupt.

SLASHING AND WINDING. In the domain of slashing, hot-air drying is still given preference over the steam-heated can with direct contact. European slashing speeds remain low compared to American, and there seems no great incentive to introduce higher speed. Application of electric infra-red rays on slashers as a drying medium is being sponsored by several French electric companies. Some progress is gradually made along this line, but apparently nothing very startling has been accomplished to date.

In the field of high-speed, automatic copping machines, Scharer has introduced a machine capable of handling flat cops. This type of package, which passed into oblivion in the U. S. quite a few years ago, still receives considerable attention in Europe probably because automatic cop-changing box looms are practically nonexistent; and the interest these flat cops hold, due to their greater capacity, still constitutes an inducement.

As a refinement, Schweiter has incorporated a device in its high-speed automatic quiller which gradually lengthens the stroke toward the nose of the cop. A longer stroke means greater resistance to sloughing-off and the possibility of using more moderate quilling tensions. Schweiter's latest automatic coreless cop winder should interest those connected with the carpet trade or other line where very coarse fillings are in order.

Zellweger is developing a portable, automatic, wire-dropping machine. Several sample machines are about to be tested in Swiss plants, and as soon as the few remaining kinks are ironed out, this equipment will be offered to the trade. The same firm has also developed other interesting gadgets such as a yarn-evenness tester built on electronic principles, an end-handing machine, a reed-denting machine —both used extensively in European plants. It is working on an automatic drawing-in machine to take care simultaneously of the drop-wires as well as the harness entering. Completion of this job appears to be somewhat distant.

STREAM-LINED LOOMS. The latest looms presented by the leading Swiss manufacturers are really delightful to look at. They are low built, neat in appearance, give the impression of sturdiness, and reflect a high type of workmanship. Elimination of the upper structure or arch, replacement of the draw cords by more substantial mechanical means to actuate the shafts, substitution of gears for the lay arms, enclosing of a great many moving parts, the generous use of motor magnetic brakes, feather-weight touch of the shipper handle, provisions permitting the loom head to run independently of the loom, etc., are among the features.

The important question is the influence of the features just cited on loom efficiency, loom operating speed, and loom upkeep. The high mechanical efficiency reached by domestic-built looms, running at speeds comparing well with those observed in Europe,

American Viscose steps up efficiency with adjustable air diffusers

Kno-Draft Adjustable Diffusers mounted on exposed ducts distribute conditioned air in the American Viscose Corporation rayon plant at Front Royal, Virginia. The diffusers can be adjusted to satisfy the cooling requirement of a particular area and maintain even temperature and humidity throughout. In certain cases, such as spinning rooms, they can be adjusted to blanket the source of heat generation. In either case, no drafts occur and no threads are blown because the air flow is directed upwards and thoroughly diffused.

Photo courtesy of American Viscose Corporation

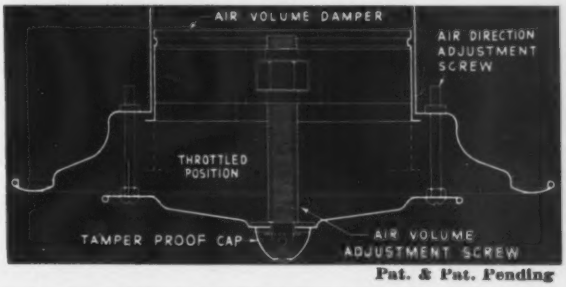
Kno-Draft Adjustable Diffusers enable engineers to overcome air distribution problems brought about by modern, high-speed production in textile mills.

With air direction and volume control on each diffuser, engineers are able to control air flow direction and volume to suit individual plant and machinery setups. These features eliminate drafts and dead air pockets, thoroughly mix room and supply air and maintain even temperatures and humidity throughout. In addition, Kno-Draft's simplicity of construction facilitates cleaning from below without the necessity of disassembly.

As a result, plants like that of American Viscose Corp. at Front Royal, Virginia, are getting the maximum benefit from their air conditioning in terms of improved product quality, less rejects, and higher worker efficiency and morale.

Free handbook: contains sketches, charts, dimension prints and instructive text that simplifies the selection and installation of air diffusers. For your copy, please write Textile Division, W. B. Connor Engineering Corp.

Here's how Kno-Draft controls air patterns. **Above: Raising or lowering bottom cone "B" affords any angle of air discharge from vertical to horizontal needed to accommodate ceiling heights or other individual plant requirements. Below: Sleeve-type, volume damper regulates outlet aperture uniformly. At constant static pressure, neither outlet velocity nor diffusion pattern is affected.**



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AIR DIFFUSION
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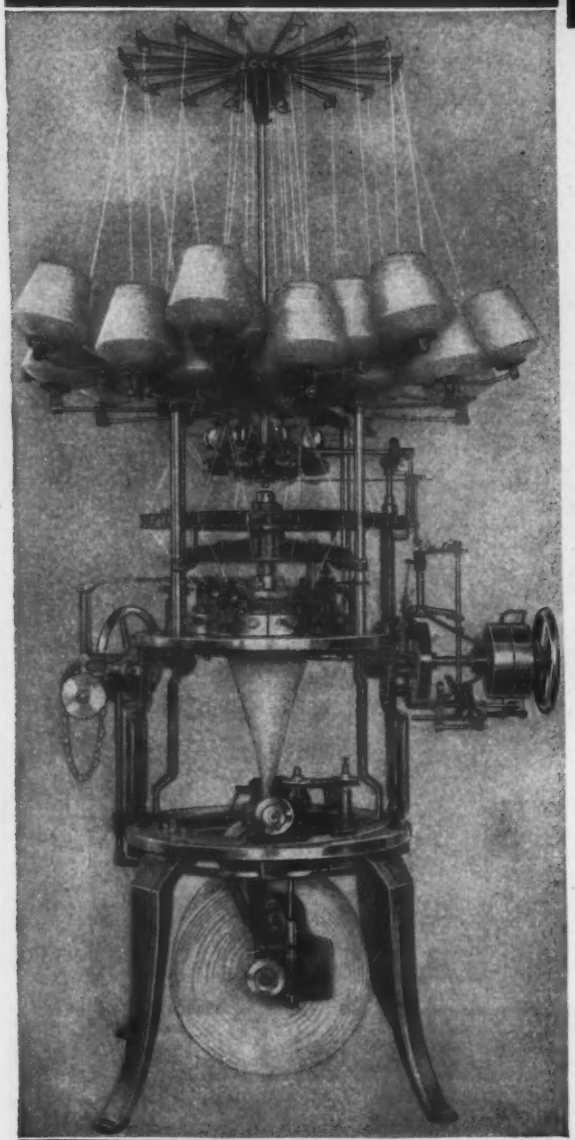
BETTER STYLING
UNIFORM SIZES
DOUBLE PRODUCTION



Here's a machine that multiplies style opportunities in knitted wear of every description. It embodies many exclusive mechanical advantages among which are:

Yarn fed under even tension guarantees uniformity in garment sizes.

Permits start of one cone to be tied to end of another without stopping machine.

Double production or better on the same floor space that old-fashioned 8-feed machines occupy.

Let us tell you more about this machine.

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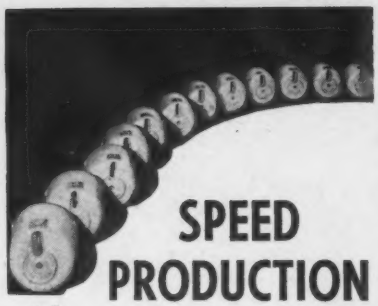

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Reduce your production costs by eliminating expensive time lost in coasting motors and machinery. In sizes up to torques of 500 lbs. or the equivalent of 100 hp. at approximately 1000 rpm . . . floor or motor mounting . . . horizontal or vertical applications . . . for AC or DC current.

For the answer to your problems involving effective retarding of motors or machinery, whether for one or a sequence of controlled stops, consult Stearns Magnetic Brake Division, Milwaukee 4, Wisc.

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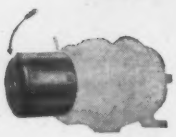

The magnetic brake with the lining wear indicator and manual release — distinctive, original.

STEARNS MAGNETIC MFG. CO.

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Magnetic Separators
Pulleys Drums Clutches

renders it difficult to crystallize one's thoughts on this subject. Some of the features of these European looms might be termed conveniences to be had at a price. Their adoption may not at once make evident a visible production gain, yet a reliable one-shot oiling system, greater ease of operation for the weaver, less overhead obstruction, etc. in time should prove to offer something valuable beside operating comfort and should contribute toward a tangible gain.

Sulzer, of Winterthur, has launched a so-called shuttleless weaving machine capable of high speed and of wide width handling, which has an excellent chance to challenge the supremacy of the present conventional looms in production of standard fabrics manufactured in large quantities. This loom appears capable of operating at 300 p.p.m. and of weaving fabrics as wide as 130 in. The width may be subdivided into several sections. The filling, taken from a large supply package such as a cone, is introduced in the shed singly and is folded in at the selvage over nearly ¾ in. Elimination of filling folding at the selvage may be accomplished by a full-turn leno or similar approaches now under study.

This is not the only shuttleless loom looking for a berth in the textile field, for a Russian weaving machine developed by Mr. Leontyev of the Moscow Textile Institute appears also to be making a bid for it. Information available on this Russian loom appears very meagre at the moment.

ENGLISH LOOM. Late in 1946, Electro-Pneumatic Looms, Ltd., of England, introduced a new type of pneumatic picking motion adaptable to any non-automatic loom. It is a simple device for pneumatically ejecting the shuttle. It consists of receiving boxes connected with the picking motion through electric relays which set off the pressure and shoot the shuttle across the warp. The conventional boxes are replaced by cylinders so that box swells and ordinary checking devices are eliminated and replaced by the compression developing within the cylinders. The operation of the checking motion is smoother than that of the conventional type. It has been operated most satisfactorily at 210 p.p.m. and holds promise for permitting speeds as high as 250 p.p.m. This development is not a radical change.

Ribbon manufacturers might be interested in knowing that Adolph Saurer, of Switzerland, offers high-speed ribbon looms weaving single picks and operating from 30 to 950 p.p.m. according to the width of the ribbon.

Continuous Bleach

(*Continued from page 141*)

washers have been changed from 10 in. to 18 in. to relieve the excessive pressure on the bearings and reduce the roll revolutions per minute necessary for the processing rate of 100 yd. per min. The horsepower rating and size of the Reeves chain drives were doubled. The rolls in the washer were changed to obtain S-threading instead of direct threading in order to eliminate distortion during the squeezing action.

PROCESSING CONTROLS. Considerable savings are effected by controls for temperature, bleach solution, and squeeze. For example, the amount of steam necessary to operate the J-box was reduced by 40% by maintaining a cloth temperature of 210° F. In addition to this saving, maximum bleach during the hour the cloth is in the J-box is also obtained. Another advantage of the controls is that they make it possible to lower the temperature to 180° F. for dyed goods, either in solid shades or in borders.

An improvement now being planned is the installation of an air aspirator that will make practicable the use of caustic in the first saturator bath for dyed goods, instead of peroxide, which is now used in both baths. Such an adaptation will result in a chemical-cost saving of about 30%.

In the continuous-bleach, rope method, Fig. 1, the fabrics are trucked to the bleachery in varying lengths, depending on the weight and construction. These lengths are sewed together to form the continuous strand, which is fed into a 4-strand hot-water washer at 120 to 160° F. to help break down the sizing, oils, and other impurities

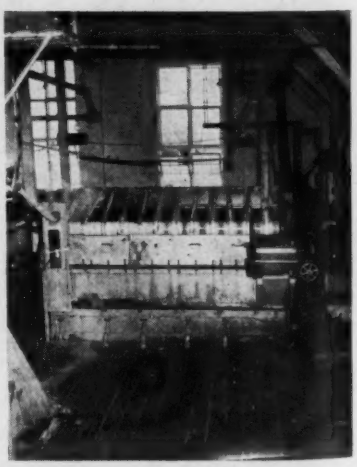

Fig. 4. 12-strand slack washer at delivery end of range. Cloth passes from here to the finishing operations.

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CALCOFAST* wool dyes
Because of their exceptional all-round fastness properties, Calcofast Wool dyes are ideal for use in quality bathing suits and beachwear.
Specifically, the Calcofast Wool dyes Yellow N, Pink N, Orange RN, Blue 2G and Bordeaux RB Conc. are *the* "seaside colors," the colors most in demand for producing the bright, rich shades that will stand up to sunlight and salt water. And, like all Calcofast Wool dyes, they are fast to carbonizing, fulling and perspiration, assure good penetration, and produce consistently level, uniform shades.
Your Calco representative will give you full information on this group of metallized dyes for carbonized wool. CALCO CHEMICAL DIVISION, AMERICAN CYANAMID COMPANY, Bound Brook, New Jersey.
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in the cotton and render the goods more absorbent.

From the washer the strand is passed through the peroxide saturator at 10.5 pH (1 part peroxide to 3 parts water by volume). Alkalinity is determined by titration with a standard acid solution. The strand emerges fully saturated and then passes through the heater tubes at 210° F. and into the J-box to remain one hour at the same temperature. Here the peroxide solution begins to break down at 203 to 205° F., releasing oxygen. Maximum breakdown is reached at 210° F. The capacity of the J-box is about 3,000 lb. of cloth.

EIGHT-STRAND WASHER. From the J-box the goods go through an eight-strand cold-water washer and into another peroxide saturator with both of approximately the same strength as the first. The goods are then entered into another J-box and allowed to remain one hour at 210° F. to ensure a complete bleach.

From the second J-box, the goods pass through a 12-strand cold-water washer, remain approximately 5 min., and emerge at about 50% saturation. They are then stored in pits, so that the ends can be reversed before completion of processing. Reversing the ends tends to raise the pile and restore fluffiness.

The bleached goods are drawn from the pits, opened, passed through a water mangle, and to a bluing-and-softener mangle. They are then hung automatically in loop lengths on a moving conveyor in the drying room, where they remain for 3½ hr. From the dryer shed the fabrics move to the finishing department, where they are carried over a tenter frame and stacked for cutting, hemming, classifying, sorting, packaging, and shipping.

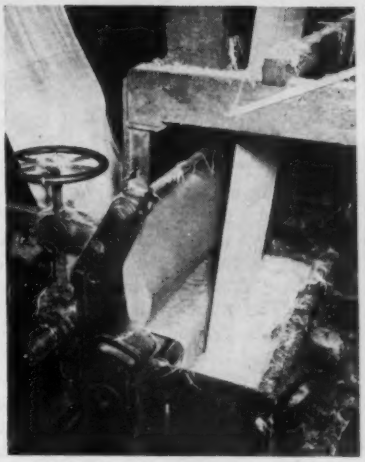


Fig. 5. Upon leaving 12-strand slack washer, cloth is scutched open and squeezed through water mangle. This view shows scroll rolls and water mangle.

BLEACHING TOWELS. For white toweling, a solution of sodium hydroxide (2 to 2½% on weight of goods) is used, instead of peroxide in the first saturator. The strength of the solution is determined by titration with sulphuric acid of known normal-

Chemical Formulas for Two Bleaching Methods

1. KIER PROCESS

WHITE TOWELS

First Boil	Bleach
180 lb. caustic	100 lb. sodium peroxide
25 lb. sodium silicate	133 lb. sulphuric acid
8 lb. wetting agent	100 lb. sodium silicate
1,000 gal. water	1,000 gal. water

First Boil-180° F. for 3 to 4 hr.
Bleach-180° F. for 8 to 10 hr.

COLORED GOODS

First Boil	Bleach
7 lb. caustic (50%)	80 lb. sodium peroxide
10 lb. sodium peroxide	80 lb. sodium silicate
25 lb. sodium silicate	100 lb. sulphuric acid
8 lb. wetting agent	1,000 gal. water
1,000 gal. water	

First Boil-180° F. for 3 to 4 hr.
Bleach-180° F. for 8 to 10 hr.

2. CONTINUOUS-BLEACH PROCESS

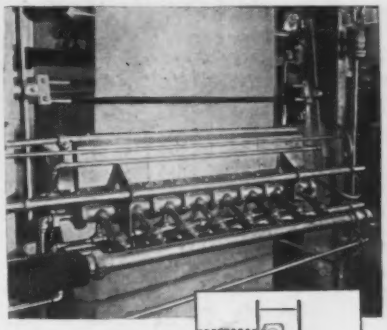
WHITE TOWELS

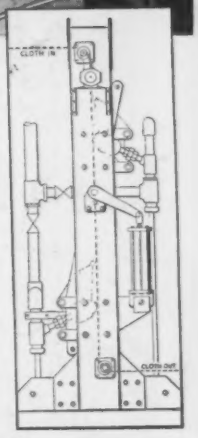
First saturator
2 to 2.5% sodium hydroxide on weight of goods

Second saturator
800 gal. water
200 lb. sodium peroxide
200 lb. sulphuric acid
220 lb. sodium silicate
45 lb. hydrogen peroxide (130 volume

(This formula is used in the second saturator for white towels and in both saturators on goods containing colored effects.)

for a
• MORE UNIFORM
• MORE RELIABLE
• FULLY AUTOMATIC
SINGEING OPERATION





YOU CAN DEPEND ON THE IHE Automatic CLOTH SINGEING MACHINE

. . . never burns cloth!

The IHE Singeing Machine singes closely and uniformly in one pass at speeds up to 400 yards per minute. Reduces cloth handling in the singeing room when used in tandem with bleaching range, caustic boil-out or mercerizer. Oil, natural gas or any artificial gas can be used for fuel. Write for particulars.

INDUSTRIAL HEAT ENGINEERING CO.
702 Woodside Bldg.
GREENVILLE, SOUTH CAROLINA

THERE'S
SOMETHING
NEW
UNDER THE SUN

CRABB

IN
PINS
AND
LAGS

See our announcement in the next issue!

77 YEARS OF CONTINUOUS
SERVICE TO THE INDUSTRY

WILLIAM
CRABB
& COMPANY
301 THIRD AVENUE
NEWARK, N.J.

ity. Hot water (160° to 180° F.) is used in the 8-strand washer, and a slightly higher concentration of peroxide solution is used in the second saturator.

Heavy white toweling is first soured by steeping with a mixture of 2 parts sulphuric and 1 part muriatic acid to help remove the size and impurities in the gray goods. A strength of 1° Tw. is used in this souring operation.

The peroxide solution for the bleaching process is made in a head tank. The solution is composed of sodium silicate, sodium peroxide, sulphuric acid, and a small amount of hydrogen peroxide. The chemicals are mixed in 800-gal. tanks in the bleaching room and pumped to the overhead 500-gal. tanks from which the solution flows by gravity to the saturators. The flow is manually operated to maintain the desired strength.

Advantages of the peroxide continuous bleach include better control; increased speed; savings in chemicals, water, steam and fuel; and less handling. The slack strand has been satisfactory for all weights of fabrics processed at the bleachery, and no difference in shrinkage and absorbency qualities has been found between goods processed by the continuous-bleach system and those processed in kiers.

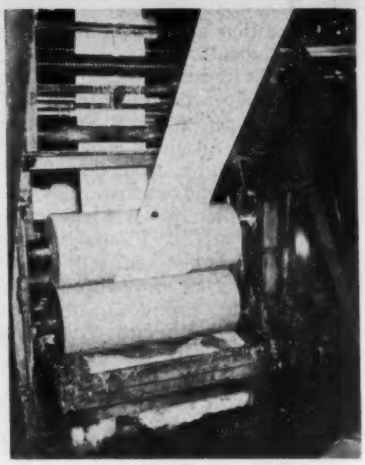
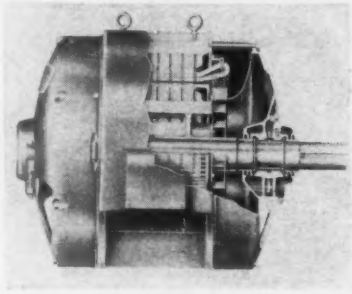


Fig. 6. Here toweling is passing through a finishing mangle containing softening agents and bluing. On leaving this mangle, it is slack dried and tentered and is then ready for cutting.

Textile Equipment News

(Continued from page 150)

Sealed bearings are designed to be cleaned and refilled without motor disassembly. Double-end ventilation is provided by a blower on each end of the rotor. Starting characteristics are NEMA Class B for across-the-line starting.



Heavy-duty squirrel-cage induction motors in ratings of 100 to 1,000 hp. at 1,800 rpm., are built in drip- and splash-proof designs. (Electric Mchy. Mfg.)

Powered Roof Ventilator

A "straight-through" type of powered roof ventilator has been announced by Swartwout Co., Cleveland, Ohio. Made in five sizes with a wide range of capacities, the new product, named Ject-O-Valve, uses a propeller-type fan to exhaust heat, smoke, fumes, etc. through a divided top which, opens and closes automatically. The ventilator is weathertight at all times, it is stated.

Nylon-Covered Dobby Cord Stronger than Steel Alone

Dobby cords consisting of an airplane-steel cable encased in molded nylon has been announced by the Danielson Mfg. Co., Danielson, Conn. The nylon covering is said to be im-

Nylon-covered steel dobby cords with patented Danco eye are reported to have long life. (Danielson)

E. F. DREW & CO., INC.

CAPRIC
CAPRYLIC
LAURIC
COCONUT
PEANUT
CORN
SOYA
LINSEED
OLEIC

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STEARIC ACID

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GLYCERINE HIGH GRAVITY
GLYCERINE CRUDE 88%
LIQUID PITCH

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also PLASTICIZER SC

THE LEADING PRODUCERS OF DISTILLED FATTY ACIDS

WECOLINE DIVISION

E. F. DREW & CO., INC. • 15 EAST 26th ST. • NEW YORK 10, N. Y.

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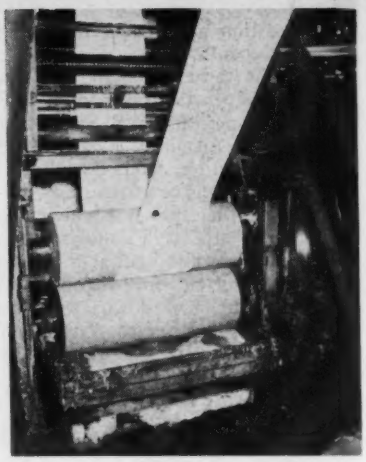

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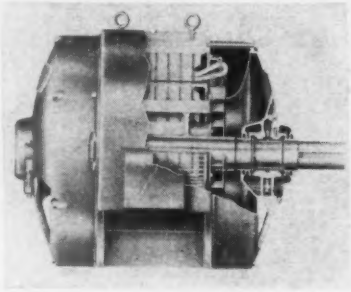

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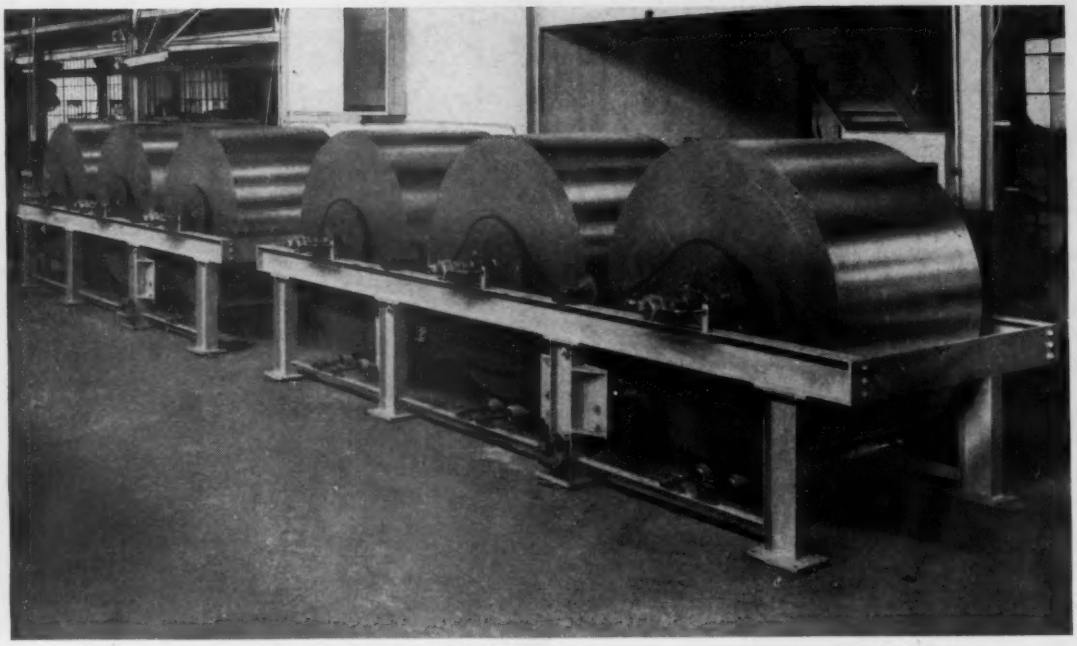
UNISTEL

STAINLESS STEEL DRYERS



Two stainless steel Back Dryers—each with 3-7 foot diameter jacketed cylinder with 60 inch face. Built to the A.S.M.E. code for 35 pounds working pressure. 6-5 inch stainless binder rolls. All mounted on anti-friction bearings and with roller chain transmission.

When you buy a **STAINLESS STEEL CYLINDER DRYER** of any type, you are investing in high priced equipment from which you expect a definite return for many years. In order to realize your expectations, buy stainless steel quality.

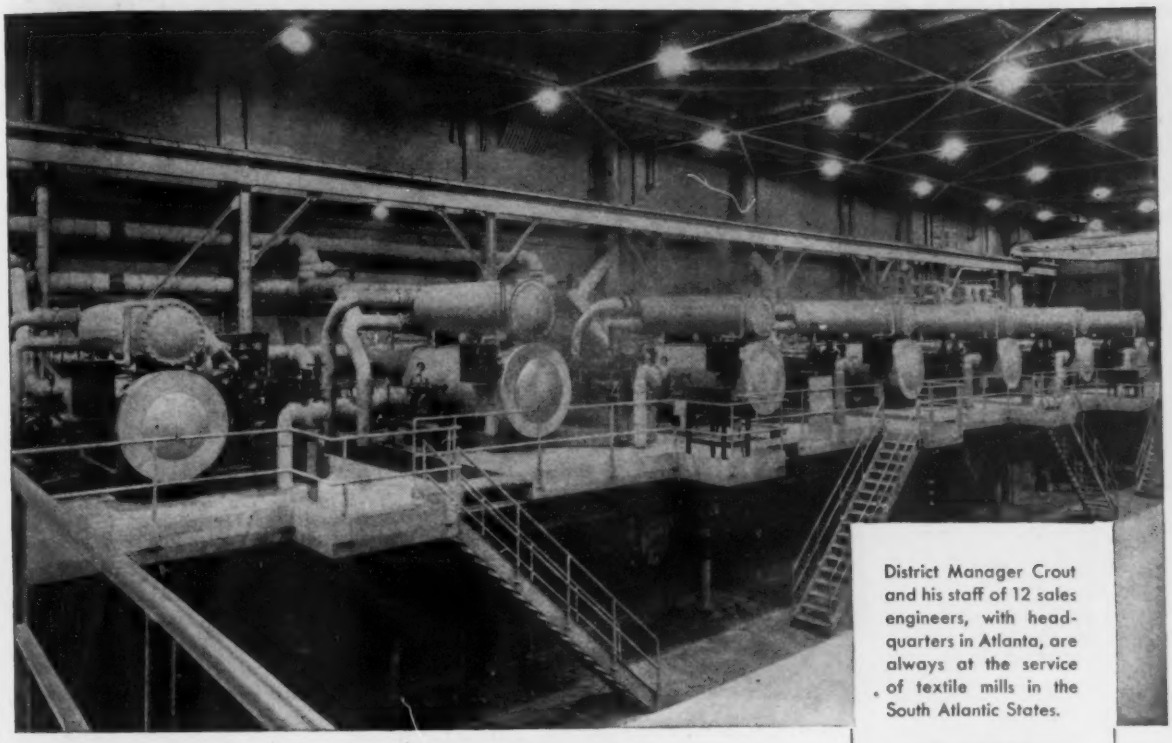
UNISTEL Dryers are individually engineered, taking advantage of the most modern technical progress. **UNISTEL** Dryers are constructed in a shop that was built for and has always specialized in stainless steel fabrication.

Engineers — Designers — and Builders of Back Dryers, Can Dryers, Kiers, Kettles, etc.

UNITED STEEL OF AMERICA, INC. 30 ROCKEFELLER PLAZA NEW YORK 20, N. Y.

Canadian Representatives: United Steel Corporation Ltd. of Canada, Toronto

The seven 1000 H.P. York Turbo-Compression Systems shown here chill 12,000 gallons of water per minute. Such compressors are available over a wide range of capacities up to 1500 H.P. per unit.



District Manager Crout and his staff of 12 sales engineers, with headquarters in Atlanta, are always at the service of textile mills in the South Atlantic States.

Air Conditioning
for every mill in the United States!

That's a large order! But York Refrigeration or Air Conditioning now in service in scores of industries would do the job with plenty of cooling capacity left over.

But do not think of York merely in terms of equipment. Equally important are the York engineers right in your own neighborhood, men of long training and wide experience who are ready right now to assist the mill owners, the consultant and the installing contractor. Backed by the wide range of York equipment as to types and capacities, they are always able to recommend the right unit in the right place, no matter how large or small.

Important, too, after the job is completed, are efficient maintenance and prompt service . . . made possible by the close proximity of the local York Office.

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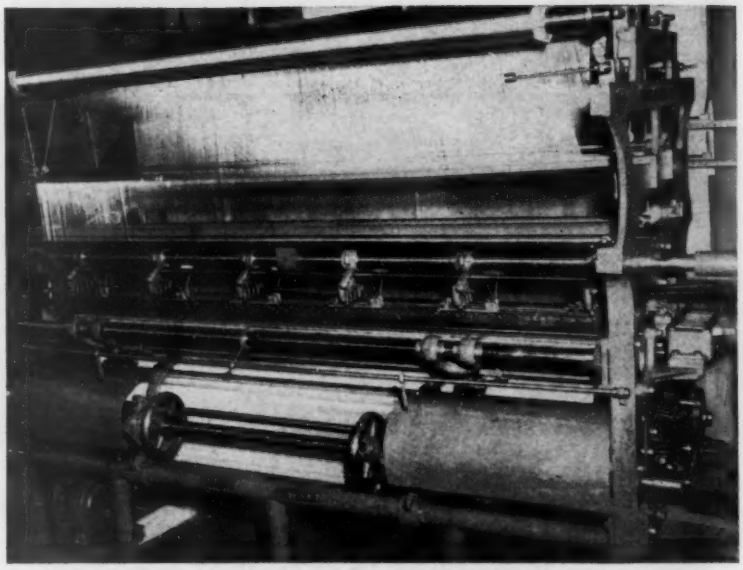
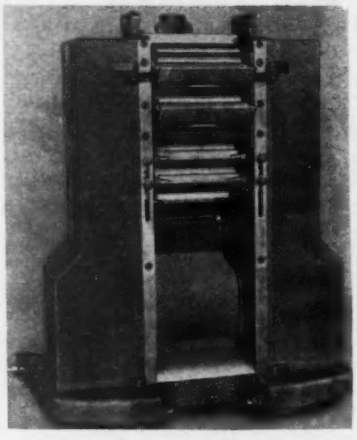


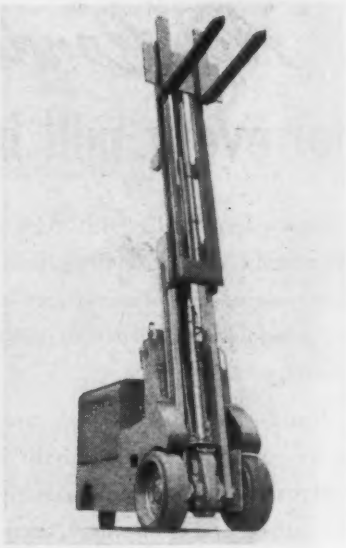
Above is the Paradis Patternit high-speed warp-knitting machine described in the Knitting Arts Exhibition report which appeared in the May issue of TEXTILE WORLD. This new machine, called a tricot-raschel type, is designed for operation as both a tricot and a raschel machine. It is reported to be available as a tricot with 18 to 24 needles per inch, and as a raschel with 6 to 18 needles to knit fabrics up to 96 in. wide. It uses up to six guide bars and employs latch needles. Reported operating speed is 250 to 500 motions per minute. The machine is manufactured by D. Paradis Co., North Bergen, N. J.

pervious to oil and moisture and to be stronger than the steel cable itself. The nylon covering reputedly can carry the load after the steel cable has failed through fatigue.

Exhaustive tests on the new dobby cord, called NY-Cord, reportedly have proved its life to be substantially longer than cotton-covered cord; the cords are safe, do not shed, do not chafe, wear longer, and stay clean, it is stated.



This fiber conditioner which removes burrs, chives, motes, and other foreign matter from wool, as described in this department in the April, 1947, issue, is made by B. F. Perkins & Son, Inc., Holyoke, Mass. It uses tension rather than pressure to disintegrate the foreign matter. The machine is customarily mounted between breaker and finisher cards of a wool set, but is reported applicable to the elimination of leaf and other vegetable trash from cotton fibers.



In this department last March, an item was run describing the new Skylift electric fork truck made by Automatic Transportation Co., Chicago, Ill. The illustration, however, was of an entirely different truck.

The above picture is being published to show what the Skylift looks like. The forks have a maximum rise of 130 in. above the floor. Although electric powered, the truck has controls which are similar to those on an automobile. The model comes in 2,000-, 3,000-, and 4,000-lb. capacities.

PENN SALT

H_2O_2 Hydrogen per Oxide

Reg. U. S. Pat. Off.

does a two-in-one job on these

In the manufacture of woven cotton colored yarn materials such as shirtings or chambrays, Pennsalt Hydrogen Peroxide performs a dual function: it brings up backgrounds to sparkling whiteness, and it develops the vat color to a more insoluble state.

Textile manufacturers find it an ideal bleaching agent for wool, silk, rayon, cotton yarns and woven cotton fabrics. That's because Pennsalt H_2O_2 is

SAFE — soft handle and high tensile strength
ADAPTABLE — to modern bleaching methods
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SUITABLE — for all bleaching problems

Pennsalt Hydrogen Peroxide is furnished in 100 volume and 130 volume strengths in 120 lb. carboys and 265 lb. drums. Our technologists will gladly aid you with your bleaching problems. Consult them, or write to us direct for specific information about H_2O_2 and other Pennsalt products.

OTHER PENNSALT CHEMICAL PRODUCTS USED IN THE TEXTILE INDUSTRY:
Caustic Soda • Soda Ash • Sulphuric Acid • Hydrochloric Acid • Chlorine • Perchloron* • Sodium Hypochlorite • Chloride of Lime • Bleaching Powder • Carbon Bisulphide • Ammonium Persulphate • Potassium Persulphate • Anhydrous and Aqua Ammonia.
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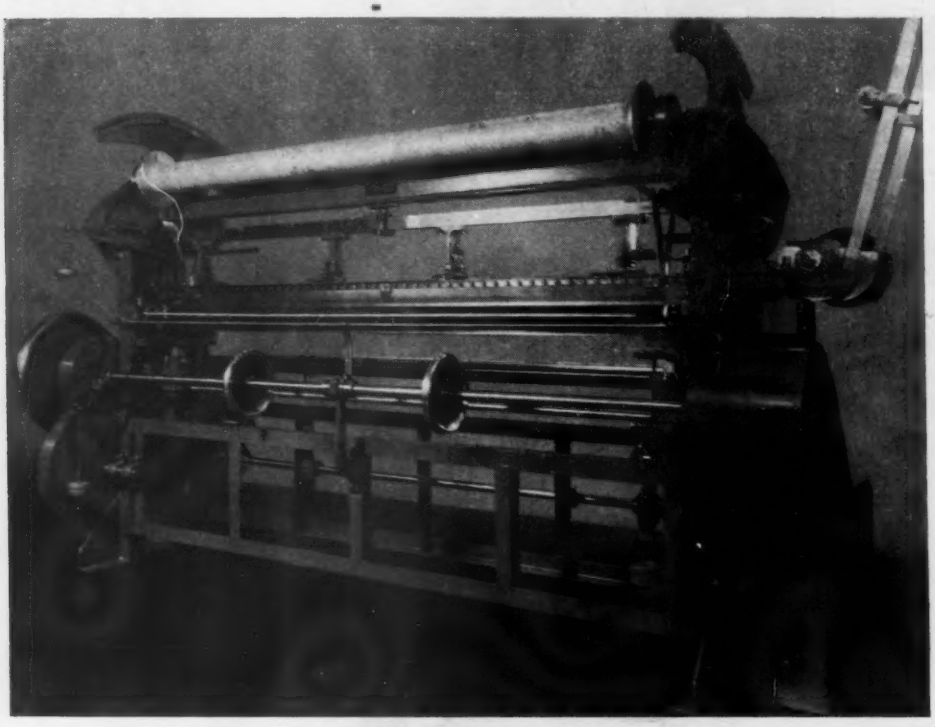
Purl Stitch—Flat Knitting—Border—Tricot—Raschel

From all over the world, men who know knitting machinery best gathered around these modern machines to see them in operation. And how well they measured up to their requirements, for they placed a large number of orders for early delivery around the world.

These sturdy 1947 models are designed to meet your conditions, wherever you may be. They are built for a long care free life. They are simple and inexpensive to operate. You can see them by appointment at our plant.



A New 1947 Model

RASCHEL TYPE WARP KNITTER

Built in two types: (1) For hand or power operation. (2) for high speed power operation. With fabricated frames and connecting braces, including brace over top of machine supporting the guide bar rod with bearings other than those in the frames. More than 30 years of experience in building flat knitting machinery is your assurance of its ability to withstand high speeds.

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PURL STITCH (LINK and LINK) and FLAT KNITTING MACHINES

340 Ten Eyck St., Brooklyn, N. Y.

Quench BEARING THIRST

with NON-FLUID OIL

TRADE MARK REGISTERED

Why continue to let thirsty bearings eat into your profits? Independent experts agree that three drops of fluid lubricating oil out of every four fed to bearings drip away unused.

The light grades of NON-FLUID OIL, which are designed to take the place of lubricating oil, possess an adhesive quality which enables them to stay in machinery until entirely used up so that every drop gives full lubricating service.

The heavier grades of NON-FLUID OIL, specifically designed to replace greases, do not require the aid of frictional heat to feed, but lubricate instantly and positively. Bearings lubricated with NON-FLUID OIL run noticeably cooler than when ordinary grease is used, thus indicating that NON-FLUID OIL reduces friction to a minimum, with a resultant reduction in power consumption and minimum wear on bearings.

• CURRENT QUOTE: "We have cut our repair cost 75% since changing over to NON-FLUID OIL."

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Bronze Travelers for WET TWISTING

U.S. Ring Travelers are made in every style and size for wet twisting on vertical rings. We supply all standard types. In addition, we make the exclusive Bevel-edge design, which we strongly recommend for certain kinds of work.

A Style and Size for Every Textile Fibre

"U.S." offers a COMPLETE Traveler Service—a complete line suited to every fibre and operation—complete engineering service assisting you in traveler selection and maintenance for maximum spinning and twisting production.

Dependable Delivery
Prompt Service Calls

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Books of Interest

Matthews' "Fibers" Returns in Modern Dress

MATTHEWS' TEXTILE FIBERS, 5th Edition; prepared by staff of specialists under editorship of Herbert R. Mauersberger; John Wiley & Sons, 440 4th Ave., New York; 1,134 pages, $12.50.

It is 23 years since the fourth and last previous edition of J. Merritt Matthews' monumental work on "Textile Fibers" was printed. The new fifth edition of the work, revised and largely rewritten by a staff of specialists, is both timely and welcome.

The volume covers all natural, regenerated, and synthetic fibers to date, considering chiefly the physical, microscopical, and chemical properties of each. Much data on thermal, optical, and electrical characteristics of the fibers are included for the first time.

The list of specialists who collaborated to produce this work contains 47 names well known in the industry. The specialist method of producing a reference book of this type has its disadvantages along with its advantages, since the specialists' enthusiasm may outrun his purely scientific viewpoint and minor differences of opinion result. For example, the author of Chap. II says on page 41, "stiff and brittle fibers, such as hemp and ramie..." The author of Chap. IX speaks on page 349 of the degumming process as applied to ramie "...so as to render the fiber non-brittle." Also in the bast fiber chapter on page 351, one may read, "The average length of a ramie fiber is 15 to 25 in.," while on page 353—"Ramie fiber is also distinguished by its great length, the individual fibers being usually 4 to 6 in. in length and at times reaching as much as 10 to 16 in." It is further commented about ramie (page 348) that the line fiber must "either be cut for the cotton system or be used on long-draft machines." Certainly the cotton system is largely long-draft today—the reference must be to long-fiber spinning machines, such as are used for flax.

This new edition does a good job on cotton and wool. It includes the hair and fur fibers, as well as the miscellaneous fibers in the vegetable group. The chapters devoted to rayon include data on history, present economic status and manufacturing methods as well as on fiber properties. The chapter on new synthetic textile fibers covers nylon; vinyl resin; vinylidene chloride; casein, soybean, peanut and albumin proteins; alginic acid, chitin, etc. Glass fibers are treated along with asbestos in the mineral group. The last three chapters are valuable for laboratory technicians in that they deal in much practical detail with fiber identification methods, quantitative fiber analysis and fiber-testing methods.

The illustrations and tables throughout the work are helpful and well chosen. Reference to them, however, is complicated by the fact that in each chapter the numbering starts afresh with a "Figure 1" and a "Table I," instead of serially through the entire book as in previous editions.

Each of the book's 24 chapters concludes with a bibliography.

Primer on Textile Coverting

PRINCIPLES OF TEXTILE COVERTING, by Irving Teplitz; Textile Book Publishers, Inc., New York; 192 pages, $4.00.

What the young coverter ought to know has at last been put between the covers of a book. The author is secretary of the Richard Finishing Co., Jermyn, Pa., and is currently a contributor to the columns of TEXTILE WORLD. Although the portions of the book dealing with fibers, yarns, and fabrics are elementary from the viewpoint of the textile manufacturer, the chapter on converting procedure is a valuable record and analysis of working details in the relationships between converter and finisher. The appendix gives copies of order forms and standards for examining goods. A chapter gives a check list of finishes.

The author gives interesting comment on current economic trends in the textile industry, especially relative to vertical integration and to the present position of silk. In the appendix, there are numerous useful tables, important among which are OPA schedules of prices for many types of goods and varieties of processing. These latter schedules are referred to in OPA terminology as "converting charges" which involves a different meaning of the word "convert" from that used in the title and body of the book where "converter" refers, of course, to the merchant who buys gray goods and sends them to the finisher.

The well-arranged index makes the material useful as a manual for converters. It should also be useful to students, finishers, cloth brokers, etc.

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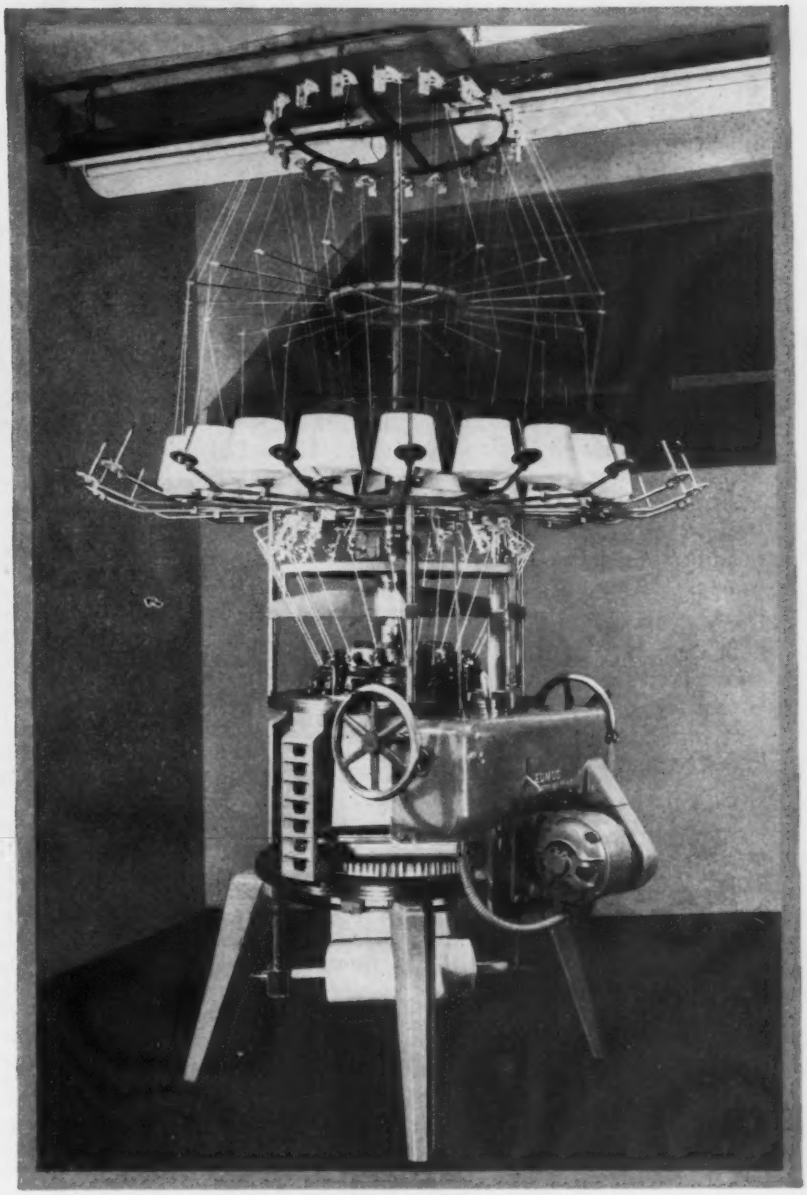

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News of the month

ACMA at Augusta. Analysis of the problems of "Textiles Tomorrow" was the objective of the 51st annual convention at Augusta, Ga., Apr. 30 through May 3, of the American Cotton Manufacturers Association. President William P. Jacobs warned that the buyers' market can lead to "stockphobia," "skepticemia," and "chiselitis" if precautions are not taken. Percy S. Howe, Jr., president of American Thread Co. and board chairman of The Cotton-Textile Institute, recommended a merging of some of the overlapping functions of the ACMA, CTI, and comparable associations. Appointed to an ACMA committee to explore this recommendation were Fuller E. Callaway, Jr., W. D. Anderson, Charles A. Cannon, Fred Symmes, and J. Craig Smith. Member support of the industry's new public-relations program [T. W., May, p. 149] was urged by G. Ellsworth Huggins, of Martel and Henrietta Mills. The successful use of local radio in community relations was explained by John Reagan, of Sonoco Products Co. Acceptance by the industry of research is leading to a renaissance of technology, declared Ward Delaney, of the Institute of Textile Technology. Walter S. Montgomery, of Spartan Mills, retiring board chairman of ACMA, pointed out that "perhaps the most critical emergency facing our industry today is found in the dangers which lurk in the proposed plans for world trade of tomorrow." The association must, he added, "be alert to move quickly and positively to protect the diminishing foreign markets which remain and to prevent unfair imports of textiles into the United States." Hugh M. Comer, of Avondale Mills, speaker at the banquet, and Senator Burnet R. Maybank, of South Carolina, also warned against the threat of foreign competition. Proposed legislation on flammability of textiles was declared impractical in a resolution. Other speakers included Sam H. Swint, president of Graniteville Co., who welcomed the members to Augusta; E. R. Oliver, of Southern Railroad, who claimed credit for his company for much of the Southern textile development to date; Major General Robert N. Littlejohn, chief of War Assets Administration; George A. Sloan, publisher of Southern Agriculturist; Wyss L. Barker, of American Association of Textile Chemists & Colorists; C. C. Smith, of Dept. of Agriculture; Dr. C. T. Murchison, president of The Cotton-Textile Institute; and several representatives of the National Cotton Council —Messrs. Blake, Lipscomb, Horn, and Jackson. Fuller E. Callaway, Jr., of La Grange, Ga., was elected chairman of the ACMA board of government for the ensuing year, the third member of

RELAXATION from the activities of a busy convention came to members of the American Cotton Manufacturers Association during the banquet on May 2. The camera didn't catch Hugh M. Comer, the banquet speaker; but that he was in fine fettle is shown by the pleased expressions of the two men who were most honored at the convention—Fuller E. Callaway, Jr. (left), who was elected chairman of the ACMA board, and Harvey W. Moore, who was elected first vice president. The banquet entertainment included a style show staged by The Cotton-Textile Institute and National Cotton Council.

Textile Calendar

The Fashion Fair, Madison Square Garden, New York, June 12 to 21, 1947.

ASTM, annual meeting, Atlantic City, N. J., June 16 to 20, 1947.

Southern Textile Association, annual meeting, Blowing Rock, N. C., June 19 to 21, 1947.

Philadelphia Textile Manufacturer Association, annual outing, Cedarbrook Country Club, June 27, 1947.

Committee D-13, ASTM, Philadelphia, Oct. 15 to 17, 1947.

American Association of Textile Chemists & Colorists, annual convention, Congress Hotel, Chicago, Ill., Oct. 23 to 25, 1947.

Textile Research Institute, annual meeting, Waldorf-Astoria, New York, Nov. 13 to 15, 1947.

International Heating & Ventilating Exposition, Grand Central Palace, New York, Feb. 2 to 6, 1948.

Hosiery Industry Conference and Annual Meeting of NAHM, Claridge Hotel, Atlantic City, N. J., April 19 and 20, 1948.

International Exposition of Textile Machinery, Equipment, & Supplies, Kingsbridge Armory, New York, April 26 to 30, 1948.

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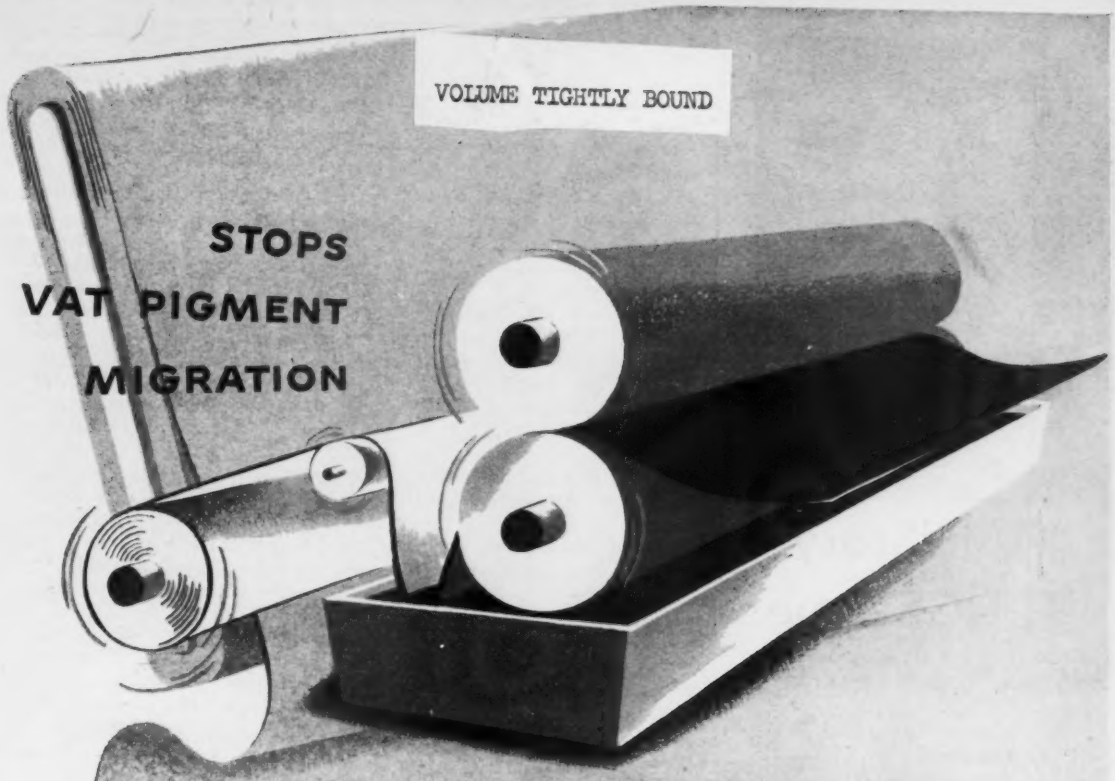
the Callaway family to hold that office. Harvey W. Moore, of Brown Mfg. Co., Concord, N. C., was elected first vice president. Ellison S. McKissick, of Alice Mfg. Co., Easley, S. C., was elected second vice president. Dr. Jacobs was re-elected president and treasurer. George M. Wright, retired president of Republic Cotton Mills, was elected to life membership.

Federation Headed by Henry Neubert. Henry Neubert, vice president of Deering, Milliken & Co., Inc., was elected to the presidency of the National Federation of Textiles, Inc., at the 74th annual meeting held April 29 in New York. The Federation re-elected its present board except for replacing Paul Whitin, at his request, with Benjamin E. Marks, a director of the Paul Whitin Mfg. Co. and New York sales agent for the company. An innovation this year was the election of three, instead of one, vice presidents. The new officers are John Fox, of Fox, Wells & Co., Inc., selling agents for the Dover, Esther, and Ora Mills; Alexander F. Ix, president of Frank Ix & Sons, Inc.; and C. C. Griffith, vice president of Newmarket Mfg. Co. Irene Blunt was re-elected secretary and treasurer.

Overseer's Group Sets Up "Guilds." The 64th semi-annual meeting of the National Association of Woolen & Worsted Overseers was held in Providence, R. I., May 17. The Carders Guild, Clair W. Cook, chairman, reported a successful discussion meeting; and overseers in other departments expressed desire for guilds covering their functions. James Halliday was nominated for president to succeed Manuel Silva. Joseph Nash was nominated for first vice president, Charles Aulerich for second; and for third there are three candidates: John Brouder, Raymond Bourey, and Raymond McBride. Elections take place in the fall.

Stress Public Relations. In his message to the convention of the Cotton Manufacturers Association of Georgia, A. B. Edge, Jr., president of Callaway Mills and retiring president of the association, made a strong plea for the inauguration of a public-relations department to operate under the guidance and supervision of the directors and the executive vice president but to be in charge of a carefully chosen man experienced in this field. The work would be coordinated with that of the Industry-Wide Committee recently set up. [T. W., May, p. 149] The plan as outlined by Mr. Edge was favorably spoken of by other speakers, and Norman Elsas urged that it be brought to the attention of the association's board for action at an early date. Frank Rushton, president of the Rushton Co., Jacksonville, Fla., spoke on current labor problems. Dr. Claudius T. Murchison, president of the Cotton Textile Institute, spoke briefly on the economic conditions facing the industry and assured his hearers that "we have no need to fear if we follow a course of sound business judgment and keep manufactured goods flowing." Sidney Janus, of Personnel Inc., Atlanta, emphasized the importance

Speakers and officers at the Daytona Beach convention of the Georgia association (left to right): A. B. Edge, Jr.; Dr. C. T. Murchison; F. Rushton; S. Janus; standing, T. M. Fo



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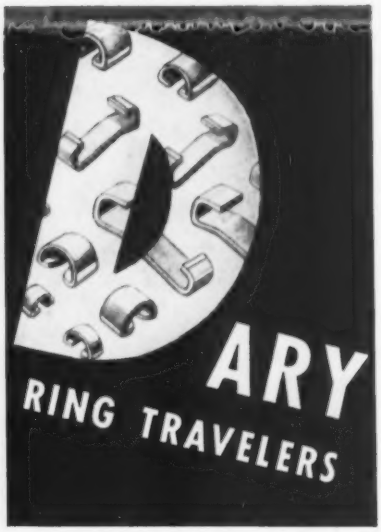

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selection of proper persons for particular jobs. We can predetermine attitudes and characteristics by "sampling" human behavior, he said. Charles C. Hertwig, vice president and treasurer of Bibb Mfg. Co., Macon, Ga., was elected association president. Other officers and directors elected to serve the coming year were: R. D. Harvey, vice president; N. Barnard Murphy, treasurer; T. M. Forbes, executive vice president; Frank L. Carter, secretary; and directors R. C. Jordan, Jr., A. J. Morse, H. M. Tichenor, and Sam H. Swint.

Sectional Research Committees. The American Association of Textile Chemists & Colorists has established Sectional Advisory Research Committees, and five of these committees have already been set up by J. Robert Bonnar, chairman of the AATCC executive committee on research. The sectional committees will suggest projects to be carried out by the association's research committee and research staff, and in some instances will carry out research work in laboratories to which members have access.

New Cotton-Grade Standards. The Cotton Committee of ACMA, A. K. Winget, chairman states as follows: "The revised boxes of the Universal Grade Standards will become effective on Aug. 1, 1947. The new boxes, in relation to present boxes, are from $2 to $10 per bale lower in value for corresponding grades. This lowered value should be fully considered before making commitments on cotton for delivery after Aug. 1; and, further, unless you can use lower quality than you have been using, it will be necessary for you to buy higher grade description. The lowered boxes will materially increase waste factor and lower quality of product."

Jap Cottons May Be Finished Here. The U. S. Commercial Co., a subsidiary of RFC, has arranged so that private buyers will be afforded an opportunity to bring Japanese cotton piece goods to the United States for finishing for re-export to other countries. The textiles will not be offered for domestic consumption and a bond assuring their re-exportation will be required of purchasers.

Heads R. I. School. Mrs. Murray S. Danforth has resigned the presidency of the Rhode Island School of Design, Providence, and been succeeded by Max W. Sullivan, dean of the school for the last year. Albert E. Simonson, since 1945 an instructor, has been appointed dean.

Avondale's Golden Anniversary. "The Avondale Mills of Alabama are this year celebrating their 50th year of operation and have always fulfilled all possible obligations as a good citizen of our community," declared W. W. Morgan, the mayor of Alexander City, Ala., on May 5. On that day, and the two that followed, visitors to Avondale's 26th annual spring inspection tour saw convincing evidence of good employee and community relations in Lafayette, Alexander City, Sylacauga (where the main office and several mills are located), Sycamore, Pell City, and Birmingham. Even in the entertainments staged by school children, high respect was paid to Donald Comer, chairman of the board; to Hugh M. Comer, president; to B. B. Comer, Jr., vice president; to other

AVONDALE MILLS officials on the plant-inspection tour which commemorated the 50th birthday of the company. From left to right, J. Craig Smith, executive vice president; Braxton Bragg Comer, Jr., chairman of the finance committee; Donald Comer, chairman of the board; and Hugh Moss Comer, president.

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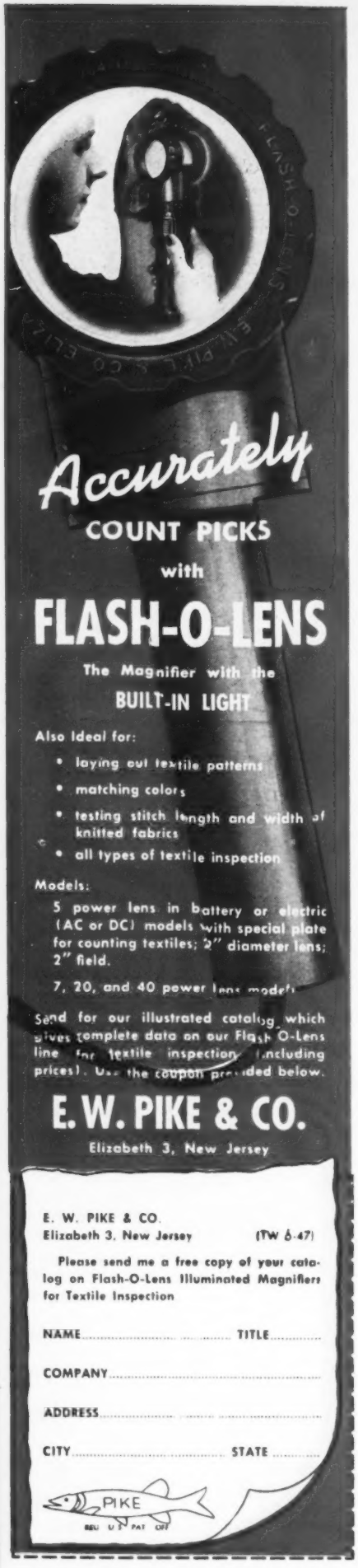
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present officials of the company; and to the memory of the late Governor B. B. Comer, founder. Avondale's unique profit-sharing plan was held up by employees as typical evidence of the progressiveness of the company in the field of human relations. Equally impressive were the examples of technological progress freely disclosed to visitors—including the new Avon drafting system, which combines roving long draft with spinning long draft in one roller-and-apron assembly to produce yarn direct from sliver. The Pneumafil scavenger system for spinning was also demonstrated, as were metallic card clothing, ball bearing spinning frame top rolls hermetically sealed to run for 15 years, nylon bolsters oiled thus far only once in six weeks, one-shot lubrication for winders, centralized salt distribution to dye machines, automatic conveyance of spinning bobbins to coners, gas-fired hot-air slashing, eccentric tubes for card coiler heads to increase poundage in can, constant-level spindle-oiling systems for slubbers and spinning frames, hermetically sealed ball-bearing spinning spindles requiring lubrication only at intervals of five years, compression calender rolls on drawing frames and cards to increase pounds per can, "Exact-a-load" controlled squeeze rolls on slashers, drip-proof slasher hoods, and countless other devices for improved materials handling, operator safety, and general efficiency. Also demonstrated was Avondale's Plastavon or bonded-fiber-web process.

May Seek Label Law Change. Possible revision of the Wool Products Labeling Act was discussed at the recent annual meeting of the National Association of Wool Manufacturers in New York. F. R. Adams, chairman of the reworked wool group of the Association, presented a report on the subject which stressed the fact that the law's provisions hardly helped in promoting the desired increased consumption of wool. By resolution, the NAWM opposed the bill empowering the Secretary of Agriculture to levy import fees on wool and wool products. Kenneth Marriner was presented with a plaque and watch, honoring his work for the industry with WPB. S. E. Pettingill, former Congressman, spoke on the American system of competitive private enterprise. Arthur Besse was re-elected president. Franklin W. Hobbs and Moses Pendleton were re-elected vice presidents. Newly elected vice presidents are: F. P. Payan, Abbot Stevens, and Elmer L. Ward. Walter Humphreys was re-elected secretary-treasurer.

Fastness to Perspiration. The Committee on Fastness to Perspiration of the AATCC has been reactivated from its status as a reference committee and will actively pursue investigations concerned with fastness of colors to perspiration under the chairmanship of John N. Dalton, of Pacific Mills and a consulting editor of TEXTILE WORLD.

Mellon Reports on Textile Research. The Mellon Institute of Industrial Research, Pittsburgh, Pa., in its annual report summarizes the work of the various fellowships including the following textile projects: analysis and control of mildewproofing agents (Clark Thread Co.); yarn handling methods (Grove Silk Co.); new sizing compounds for wet and dry knitting of nylon hosiery yarns; surface-active agents (Onyx Oil & Chemical Co.); felts and felting processes (Fur Processing Co.); consumer-goods evaluation (Kaufman Dept. Stores, Inc.).

Dyeing Fiberglas. Development of a new process of filament coating, whereby a thin protein film (gelatin type) is applied to Fiberglas yarns as they are formed, has made it possible to dye the yarns with ordinary dyes and by commonly used methods.

Carpet Promotion. The carpet industry is planning an intensive program of basic consumer research in addition to its greatly expanded advertising program, Merrill A. Watson, president of the Carpet Institute of America, told 100 representatives of the press and radio at the celebration which marked the completion of the $3,500,000 spinning mill and dye house of James Lees & Sons Co. at Glasgow, Va., last month.

N. E. Fund Increased. An unrestricted gift of $10,000 has been made to the New England Textile Foundation, Providence, R. I., by the Allied Stores Foundation, New York.

Establishes Fellowships. Tennessee Eastman Corp., Kingsport, Tenn., will support six postgraduate fellowships in chemistry, chemical engineering, and textile engineering during the school year 1947-48. The textile fellowship goes to Georgia School of Technology.

Ashland Scholarship. Ashland Corp., Jewett City, Conn., will grant a textile scholarship to a graduating member of the senior class of the Griswold High School, Griswold, Conn. Successful applicants for the scholarship will not be limited to any particular institution.

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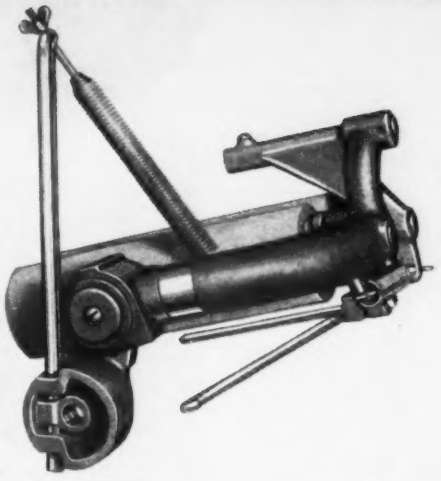

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The original Mount Hope Swing Guider points of superiority are retained. They are as follows:

Purely mechanical. No electrical switches or coils to burn out or short circuit; no air valves to clog.

Only two moving parts. Upkeep correspondingly low.

Wide adaptability. Will handle from heaviest to most delicate fabrics.

Positive but gentle control. No more control is exerted than is necessary for the particular conditions at the moment.

Rust proof. Prevents soiling of fabrics.

Reversible rubber rolls. When end of roll contacting selvage becomes worn, it can be reversed, thus giving double life.

Each head has two ball bearings, grease packed for a lifetime of service. These permit free pivoting action.

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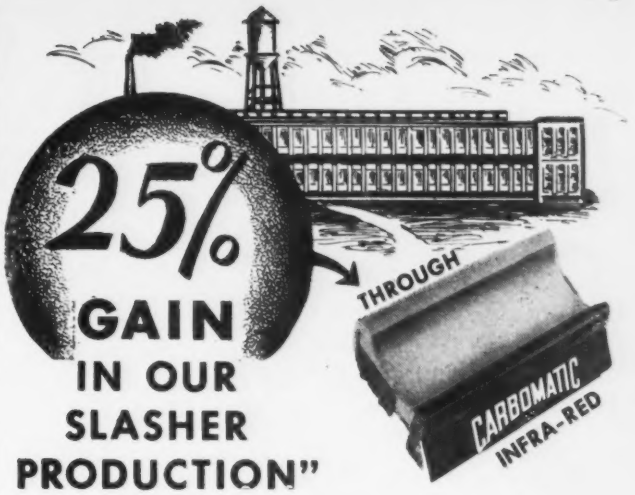

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Canadian Textile Engrg. Ltd.
980 St. Antoine St., Montreal

FIRST CHOICE IN APRON LEATHERS

LAWRENCE

Long Draft Apron Calf

It's Better Naturally

THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN

A. C. Lawrence Leather Company, Peabody, Mass. Manufacturers of Lawrence Spinne Calf—top name in roll coverings.

A. C. LAWRENCE LEATHER CO. PEABODY TEXTILE LEATHERS

NEWS ABOUT Suppliers

Emmons Loom Harness Co., Lawrence, Mass., and Charlotte, N. C., has formed a special division called the Southern Knotwood Apron Co., to manufacture, sell, and service Knotwood metallic aprons for the Southern states. George A. Field is in charge of the new company.

National Ring Traveler Co., Pawtucket and Charlotte, has added J. B. Poteat, formerly with Dundee Mills, Inc., to its sales force. He has been assigned to the Griffin, Ga., territory where he will be associated with H. B. Askew.

Universal Winding Co., Providence, R. I., as reported in this department last month, has purchased the Atwood Division of Farrel-Birmingham Co., Inc., formerly the Atwood Machine Co., manufacturers of twisting equipment. Robert Leeson, president of Universal in commenting on the Atwood purchase said: "This move places behind Atwood machines all of Universal's engineering facilities and long-time contacts with textile mills throughout the world and about triples the field sales-engineering force back of Atwood twisters. The incorporation of Atwood's twister business into Universal's cone-winder business is a natural, inasmuch as both types of machines are closely allied in the preparation of yarn in mills." On May 1, Universal took over all the fixed assets, good will, and inventories of Atwood and also assumed all obligations under its material purchase contracts as well as the responsibilities under its contracts to supply machinery to the textile industry.

Clover Leaf Mfg. Co., Honesdale, Pa., and **Freeland Spool & Bobbin Corp.,** have been consolidated, effective May 1. Executive officers will be in Hazleton, Pa.; sales offices and purchasing in Honesdale, Pa. Chairman of the board is William B. Stoddard, former president of Clover Leaf. President and general manager is George B. Markle, Jr., former president of Freeland. Vice president in charge of sales is R. P. Bennett.

WILLIAM WONNACOTT, on April 18 completed 70 years of service with the Willcox & Gibbs Sewing Machine Co., Ltd., London, England, having joined the company as errand boy and junior clerk in 1877. He became managing director of the company in 1908, and held that post until his retirement from active duty a few months ago. He retains, however, the chairmanship of the board and is still active in an advisory capacity in company affairs. Mr. Wonnacott is the senior member, in point of service, on the board of directors of the Willcox & Gibbs Sewing Machine Co. of New York. His service on this board began in 1912. Until recent years, he was a frequent visitor to the United States.

C. D. Brown Textile Engineering Service, Inc., Worcester, Mass., has been established with offices at 1 Assonet St. This service has been organized by C. D. Brown, who was formerly director of research, for Draper Corp., Hopedale, Mass.

Henderson Foundry & Machine Co., Div. of Southern States Equipment Corp., Hampton, Ga., has appointed Roy W. Schrimshire as sales representative in West Georgia and Central and Southern Alabama. He was formerly with Eagle & Phenix Mills and was superintendent of Jordan Mills for 4½ years. Prior to becoming associated with the Hender-

son organization, Mr. Schrimshire conducted his own mill supply business.

Edgar A. Rogers, Chattanooga, Tenn., machinery representative, has added Chester A. Roush, Jr., to his staff. Mr. Rogers has specialized on process-plant requirements, and represents, among others, Mixing Equipment Co., Rochester; Foster Engineering Co., Newark; Pennsylvania Pump & Compressor Co., Easton; The Thermix Corp., Greenwich, Conn.

E. I. du Pont de Nemours & Co., Wilmington, Del.—The Nylon Div. has appointed George S. Demme as assistant director of sales in charge of nylon yarn sales and technical service, and Frank H. Coker as assistant director of sales in charge of nylon yarn sales development and promotion. Both report to Warren A. Beh, director of sales. Mr. Coker was formerly assistant director of sales of the Rayon Div. In the Rayon Div., Philip F. Brown, assistant director of sales in charge of yarn since 1935, has been appointed assistant director of sales covering all activities. F. F. Hubach, manager of the district office at Charlotte, N. C., has been transferred to the Philadelphia, Pa., district office as manager. D. L. Lewis, Jr., present manager at Philadelphia, becomes manager of the Charlotte district.

Monsanto Chemical Co., St. Louis, Mo., has appointed J. M. Graham, Jr., formerly assistant director of the company's General Development Dept., to the General Engineering Dept. as manager of the process section. H. T. Gammon has returned to his former post as manager of the Project Analysis Section. F. A. Abbiati, general manager of sales for Monsanto's Plastics Div., at Springfield, Mass., has been appointed assistant general manager of the division. He is succeeded as general manager of sales by James R. Turnbull. Daniel S. Dinsmoor, vice president of Monsanto and general manager of the company's Merrimac Div., at Everett, Mass., has resigned. Josiah B. Rutter, now director of the General Engineering Dept., will succeed him as general manager of the division. Mr. Rutter, in turn, will be succeeded by Fred G. Gronemeyer, at present assistant director of the General Engineering Dept. Dr. Lester A. Pratt general sales manager of the Merrimac Div., has been appointed assistant to the division general manager. Ivan V. Wilson has been appointed assistant director of research for the Merrimac Div.

James Talcott, Inc., New York, has appointed Matthew C. Spinner to the staff of its new business department. Mr. Spinner has been affiliated with William Iselin & Co., Garfield Worsted Mills, National Credit Office, Pacific Mills, and Schnell Fabrics, Inc.

Mixing Equipment Co., Rochester, N. Y., has appointed the White Industrial Sales & Equipment Co., with offices in Akron and Cleveland, to handle the Mixing Equipcent Co.'s account in Ohio.

Alco Oil & Chemical Corp., Philadelphia, has appointed Dr. Onslow B. Hager as director of research and development. Dr. Hager's experience in textile chemistry includes three years

NEARLY A HALF-CENTURY OF SERVICE.—N. A. McManus (left) and Elias D. Cohen (right), vice presidents of National Starch Products Inc., New York, receive 45-year pins in recognition of continuous service with the company from Frank K. Greenwall (center), president of National.

TOP NAME IN ROLL COVERINGS

LAWRENCE

It's Better Naturally

THAT'S WHY, WHERE QUALITY COUNTS, CALFSKIN SPINS THE YARN

A. C. Lawrence Leather Company, Peabody, Mass. Manufacturers of Lawrence Calfskins — 1st choice for aprons.

A. C. LAWRENCE LEATHER CO. TEXTILE LEATHERS PEABODY

SIGN OF A SMART MILL OPERATOR

YES, HERE'S A MAN who prefers to get his finishing done efficiently, smoothly, yet at a truly reasonable cost.

For Exsize, as scientific tests will show, does a really economical job. Hundreds of yards of cotton or cotton-mixed cloth can be desized with Exsize for only a few pennies.

Just as important—Exsize does a truly outstanding job. For Exsize is a concentrate of natural enzymes with not a trace of acids . . . harsh alkalis or destructive chemicals. It dilutes quickly . . . gives soft, elastic feel, uniform absorbency, a good "hand."

If you are not already in the Exsize league of satisfied mill operators . . . why not have our Pabst Technical man show you the extra values in Exsize? He'll be delighted to run tests for you in our own expertly staffed laboratories or in your own mill.

WRITE FOR FREE BOOKLET

PABST BREWERIES

PABST SALES COMPANY

CHICAGO, ILLINOIS

Warehouses at Jersey City, and Textile Warehouse Company, Greenville, S. C.

Copr. 1947, Pabst Brewing Company, Milwaukee, Wisconsin

as research chemist for Dan River Mills and 12 years as head of the textile chemicals evaluation and sales-service laboratories of Rohm & Haas Co.

Sandoz Chemical Works, New York, has appointed T. F. O'Brien and J. E. Ormiston, Jr., as sales representatives in the Boston office.

E. F. Houghton & Co., Philadelphia, has appointed Dr. H. B. Walker, formerly director of textile research for Rohm & Haas Co., Philadelphia, to be assistant to Dr. R. H. Patch, Houghton's vice president in charge of operations.

American Cyanamid Co., Textile Resin Dept., Bound Brook, N. J., has appointed two new sales representatives—J. J. Derrig in New York state, Western Connecticut, and Northern New Jersey. R. H. Drucker, who formerly had his headquarters in Bound Brook, has been assigned to the Pennsylvania, West Virginia, and Virginia area with headquarters in Philadelphia.

Jacques Wolf & Co., Passaic, N. J., has begun construction of a new plant in Bassett, Calif. The new building, two-story and with 8,500 sq. ft. working space, will cost $30,000. C. Schreur is head of the Los Angeles office.

R. W. ANGSTADT, associated with the Textile Resin Dept. of American Cyanamid Co., Bound Brook, N. J., since 1945 as a chemical engineer, has been appointed southern sales manager of the department. He has had 24 years of experience in textile finishing, involving processing of silk and synthetic yarns, novelty and flock printing, and other finishing techniques on a wide variety of fabrics. He was previously with National Silk Dyeing Co. and Dominion Silk Dyeing & Finishing Co.

JOHN MERROW WASHBURN, who has been elected president of the Merrow Machine Co., Hartford, Conn., to succeed the late Joseph M. Merrow. He joined the company in 1919 and was elected treasurer in 1930.

The Foxboro Co., Foxboro, Mass., has transferred its facilities for servicing the Dr. Th. Horn portable tachometer to James G. Biddle Co., 1316 Arch St., Philadelphia.

Orr & Sembower, Reading, Pa., has created a new Chemical Development Div. and appointed J. E. Simpson to be its director. This new division will be principally devoted to industrial processes utilizing surface-active materials. Dr. Simpson directed research and development work for the Quartermaster Corps, in the field of surface-active chemicals, for the last 4½ yr.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa., has transferred Arthur F. Bixby, heavy chemicals salesman in the Philadelphia office, to the Pittsburgh office to take the place of C. W. Dermitt, who recently was transferred to Cincinnati as district sales manager. William P. Drake, manager of sales of the Special Chemicals Div. of Pennsylvania Salt, has been appointed assistant vice president. Pennsylvania Salt has under construction at its Wyandotte plant additional boilers and related power generating equipment, including a new power plant building to house it.

Dow Chemical Co., Midland, Mich.—Dr. John J. Grebe, director of Dow's physical research laboratory was awarded the John Wesley Hyatt gold medal for achievement in the advancement of

KILLS PLANT MAINTENANCE ENEMIES

LIQUID PORCELAIN-LIKE

DAMP-TEX

Damp-Tex super-enamel can be applied to surfaces despite moisture, heat, fumes and many other extreme conditons. Its water-proof film retards deterioration, increases efficiency, turns depressing, dingy interiors into gleaming, porcelain-smooth beauty. Resistant to fungus, 2% caustic solution, steam and lactic acid. One coat covers. Comes in white and colors. Used in over 4000 plants. Write for our trial offer.

Proved Fungus Resistant by FUNGUS TEST

Proved Lactic Acid Resistant by ACID TEST

DAMP-TEX FOR WET OR DRY SURFACES

STEELCOTE MFG. CO. • ST. LOUIS, MO.

Canadian Manufacturer—Standard Paint & Varnish Co., Windsor, Canada

"Here's What We Want in a Dyebox,"

said Textile Dyers

1. Less time for loading, heating, lacing, doffing, cleaning.
2. Greater saving of steam and water.
3. Production of cleaner, higher quality work.

And Here's the Box We Designed

As specialists in fabricating stainless steel textile equipment, we present this new dyebox for quality dyeing. It assures all the time and money savings that dyers demand in new equipment — all the convenience of an open type box combined with the advantages of a fully enclosed box.

The NEW BLICKMAN DYEBOX

Stainless Steel and Fully Enclosed

Write for further information

S. BLICKMAN, INC.

406 GREGORY AVENUE • WEEHAWKEN, N. J.

Manufacturers of stainless steel textile equipment, dye boxes, linings, cylinders, dry cans, rolls, hoods, tanks

Might be better to Clean by Hand

Rigged with ParksTurbo Traveling Cleaners, frames are blown off every three or four minutes.

Lint and fly do not get a chance to be spun into the yarn. They are shooed away.

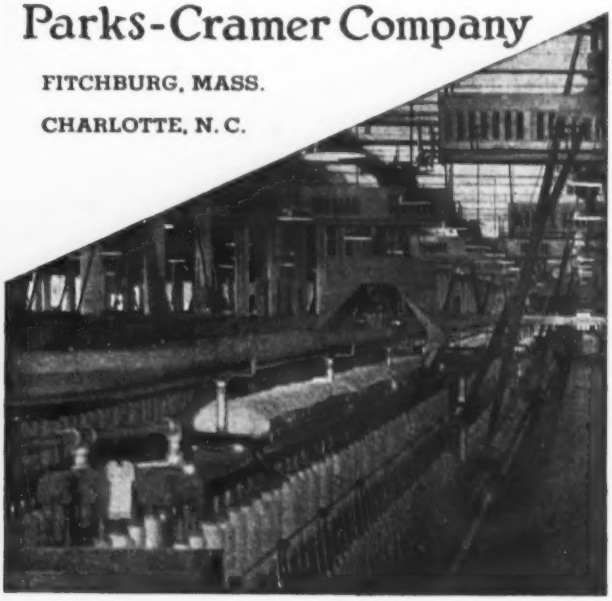
Hand cleaning, done as often or as regularly, might be better. But what spinner would want to fan a frame (not to mention five or six) fifteen or twenty times an hour? Or who would want her to?

ParksTurbo Traveling Cleaners take the drudgery out of spinners' work—and earn their keep besides.

Parks-Cramer Company

FITCHBURG, MASS.

CHARLOTTE, N. C.



plastics; and Robert R. Dreisbach of the staff of the physical research laboratory was presented a silver medal by the Hyatt award committee in recognition of his contribution to the development of styrene.

General Electric Co., Schenectady, N. Y., has assigned W. J. Campbell, G.E. welding engineer, as arc-welding specialist for the southeastern district, with headquarters in Atlanta, Ga.

Westinghouse Electric Corp., Pittsburgh, Pa., has appointed J. H. Jewell as manager of apparatus sales, with headquarters in Pittsburgh.

The Goodyear Tire & Rubber Co., Akron, Ohio, has started operations at the recently completed Pathfinder Chemical Corp., as subsidiary at Niagara Falls, which is producing vinyl resins.

Emery Industries, Inc., Chicago, has appointed R. T. Hull as Eastern technical representative for its "Plastolein" Products Dept.

Dobeckmun Co., Cleveland, Ohio, has elected Ennis P. Whittley, who joined the company in 1945 as director of sales, to be vice president for distribution.

Towmotor Corp., Cleveland, Ohio, has opened a factory sales and service branch for Towmotor fork lift trucks, tractors, and accessories at 1171 Cooper St., Camden, N. J.

New Departure Div. of General Motors Corp., Bristol, Conn., has appointed Milton L. Gearing as general manager succeeding F. G. Hughes retired. Mr. Gearing first joined New Departure 32 years ago.

American Machine & Metals, Inc., East Moline, Ill., has elected John C. Vander Pyl, of New York, as president of the corporation, succeeding P. G. Mumford. Mr. Mumford was reelected chairman of the board. Charles W. Anderson was chosen to succeed Mr. Vander Pyl as executive vice president.

Oronite Chemical Co., San Francisco, Calif., has elected Gaynor H. Langsdorf as a vice president in charge of products and processes.

RAYMOND F. EVANS, who has been elected president of Diamond Alkali Co., Pittsburgh, Pa., to succeed John T. Richards. The latter is retiring as president and chairman of the board after a 30-year record with the company. Mr. Evans joined Diamond in 1931. He has been active in the company's research and lately has been executive vice-president.

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., has elected Brison Wood as treasurer succeeding Willard L. Huff, who has been serving as executive vice president and treasurer, and who continues as a director of the company and executive vice president.

Liquid Conditioning Corp., Linden, N. J., has appointed Vincent J. Calise to its organization in the capacity of technical manager. William A. Krebs has been named engineering and sales representative in the Philadelphia district.

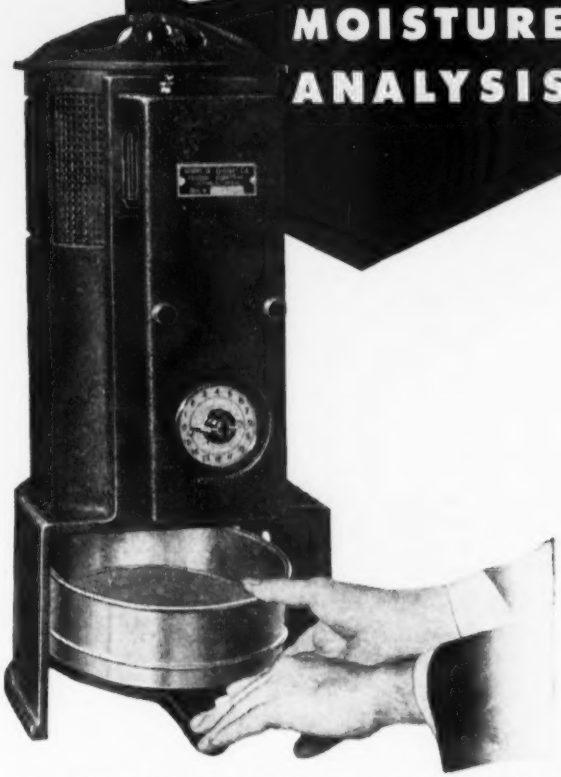
Bailey Meter Co., Cleveland, Ohio, has assigned three engineers to its branch offices; R. L. Stewart to Denver, L. E. Bartel to Kansas City, G. D. Williams to Atlanta after temporary duty in Boston.

Philco Corp., Philadelphia, Pa., has appointed John M. Otter to the position of general sales manager.

Bausch & Lomb Optical Co., Rochester, N. Y., has elected Ivan L. Nixon and Ben Ramaker as vice presidents. Mr. Nixon is manager of the firm's instrument division. Mr. Ramaker is manager of the firm's ophthalmic division.

W. B. Connor Engineering Corp., New York, has added Patrick J. Shea to its staff. Mr. Shea was a member of the Carrier organization for eight years. He will concentrate on the promotion of Dorex air recovery.

FLASH-DRYING SPEEDS MOISTURE ANALYSIS



The Dietert Moisture Teller is an instrument of laboratory precision which is successfully operated anywhere in the plant by non-technical personnel. By this means results are determined quickly enough to provide adequate control of many processing operations.

The amount of moisture in granular, fibrous, or crystalline materials is determined accurately, safely and without resorting to charts or involved mathematical calculations. An outstanding advantage of this equipment is that it does not lose its calibration—it is always dependable.

The Moisture Teller is available in five portable models for samples from 1 to 2000 grams in weight, each compact, self-contained and sturdily constructed.

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Harry W. Dietert Company

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DIETERT MOISTURE CONTROL EQUIPMENT

Johnson Firsts

Leadership consists in keeping constantly ahead of our field in meeting the growing needs of industry we serve.

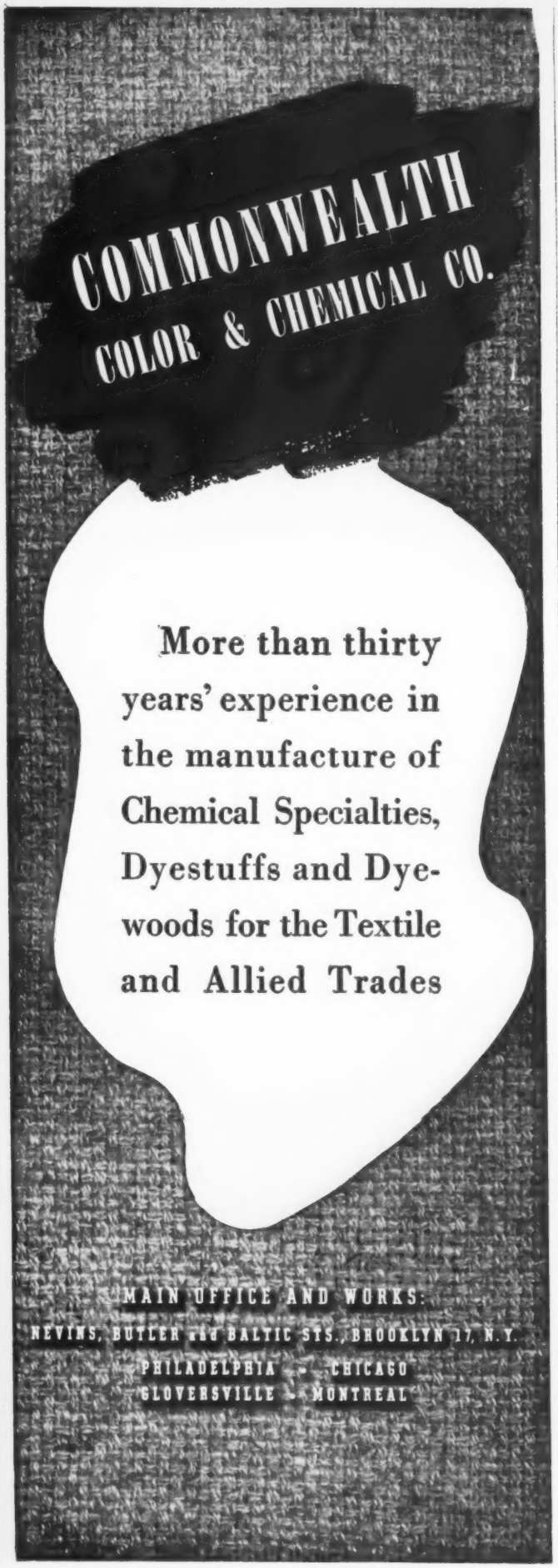
Here are some of the Firsts scored by Charles B. Johnson Machine Works in designing . . .

WARP SIZERS

- **First to produce a practical sizer for rayon warps.**
- **First to build a five cylinder sizer.**
- **First to build a seven cylinder sizer.**
- **First to introduce variable speed drive for warp sizing.**
- **First to build a sizer convertible for silk or cotton system sizing.**
- **First to give complete finger tip control of stretch in sizing.**
- **First to introduce a stretch indicator to give continuous percentage of stretch during operation.**
- **First machine for treating rayon yarn for rubber tire cords.**

Charles B. Johnson MACHINE WORKS

PATERSON, NEW JERSEY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COLOR & CHEMICAL CO.
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NEWS ABOUT Mills

Cotton Mill News

Balfour Cotton Mills, Inc., Balfour, N. C., has let contract to Potter & Shackelford, Greenville, S. C., for a one-story addition to cost over $60,000.

Beaumont Mills, Spartanburg, S. C., is completing the installation of new automatic spoolers. Two new semi-automatic conveyors and roofing of the outside ramps at the No. 2 mill are also scheduled for the plant during the year.

Berkshire Thread Co., New York, N. Y., has filed application for permission to operate in Pennsylvania. The company proposes to operate a plant in Topton, Pa.

Compania Colombiana de Tejidos, Medellin, Colombia, has purchased three one-process pickers in this country. One of the machines was shipped by air.

Corsicana Cotton Mills, Corsicana, Tex., closed part of last month for repairs and replacements valued at $75,000. A humidifying system and a power switchboard were installed. J. N. Edens is president.

Dundee Mills, Griffin, Ga., has let contract to Newton Coal & Lumber Co., for construction of a 200x175 ft., one-story brick and concrete dye and bleachery building at a cost of $175,000. The building will have concrete floor, concrete slab roof, and cork insulation. All piping will be set in the floor. It will also have a testing laboratory. The building will house the continuous open-width bleaching process equipment that is expected to cost over $300,000. A new oil-fired boiler will be installed. The plant is expected to be in operation within a year.

Efird Mfg. Co., Albemarle, N. C., has sold controlling interest to American Yarn & Processing Co., Mount Holly, N. C. The former operates a cotton-yarn spinning plant with about 67,000 spindles and 900 employees.

Fabrica Argentina de Alpargatas, Buenos Aires, Argentina, is building a new cotton spinning and weaving mill at Florencio Varala to occupy 160,000 sq. ft. of floor space and cost $5,000,000. Argentina cotton will be used exclusively.

Forsyth Cotton Mills, Forsyth, Ga., plans construction of a one-story addition and will install about 4,000 new spindles and accessories.

Gold-Tex Fabrics Co., Rock Hill, S. C., plans a one-story addition. Cost, including equipment, will be over $125,000.

Hamer Spinning Mills, Inc., Hamer, S. C., is installing new machinery, at the rate of 20% annually. Addition of new equipment will continue until all of the old machinery has been replaced.

India—It is reported that 125 new cotton mills with nearly 3,000,000 spindles have been proposed for erection throughout India.

Mooresville Cotton Mills, Mooresville, N. C., plans to construct another plant this year. The company will spend $150,000 for looms and $150,000 for finishing machinery.

Pacific Mills, Boston, Mass., has acquired a 300-acre tract for future industrial development at Brookneal, Va. At present the company has wool, cotton, and rayon mills at Halifax, Va., Carboro, and Rhodiss, N. C., and Columbia and Lyman, S. C.

Patterson Mills, Patterson, N. C., has been taken over by new management which will continue production of yarn as heretofore. New owners of the mill are Malcolm A. Angus, president, of New York; W. M. Nicholson, vice president, of Charlotte, N. C.; Dave Brown, treasurer, and Edwin Citron, secretary, both of New York.

Santee Textile Mills, Bamberg, S. C., is planning an ad-

Eyes LEFT!

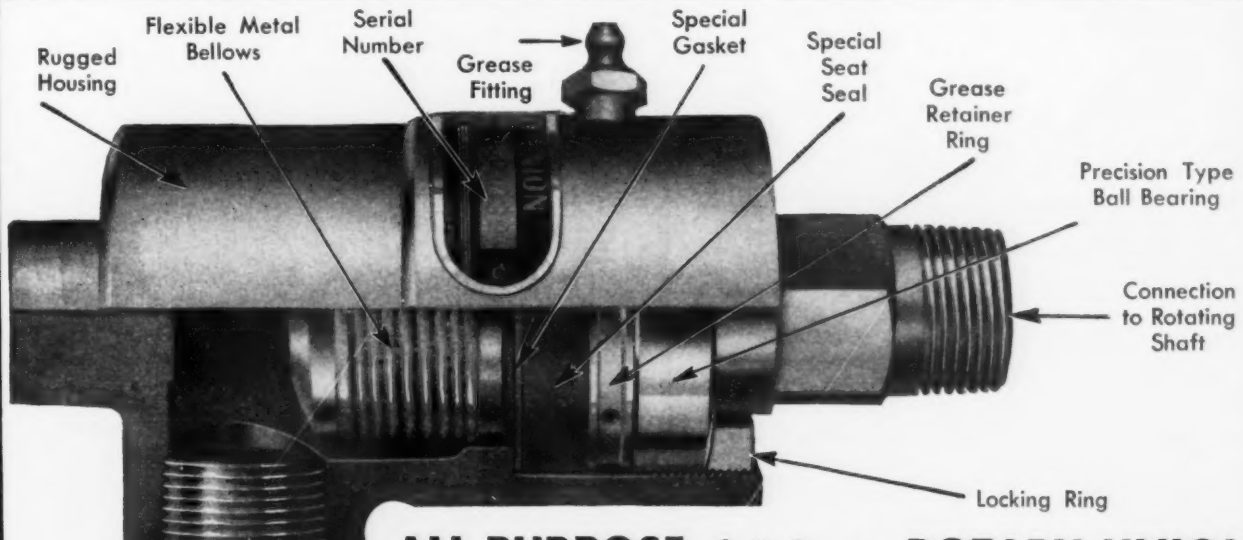
But those legs aren't all Mother Nature's work. That smooth, sleek look is due partly to lovely, wispy hose . . . elegant DuraBeau *Finished Hose* that makes the wearer feel at her very best. Hose that is water and spot repellent; that has *extra high* run and snag resistance. Hose that is soft and gossamer sheer in appearance. Hose with that *inherent* DuraBeau *Finish* . . . for miles and miles more wear.

Such quality builds customer confidence in your product, and makes them come back for more and more of the *same*.

DuraBeau
Reg. U. S. A. and Canada
TEXTILE FINISHES

Scholler Bros., Inc.

Mfrs. of Textile Soaps, Softeners, Oils, Finishes • Collins & Westmoreland Sts., Phila. 34, Pa. • St. Catharines, Ont., Can.



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There is no other unit like the ALL PURPOSE Ball Bearing ROTARY UNION. Exclusive design features, plus advanced manufacturing methods and use of special materials, make the ROTARY UNION the most efficient and most economical device for its purpose that is available on the market. Ask for your copy of Engineering Catalog No. 350.

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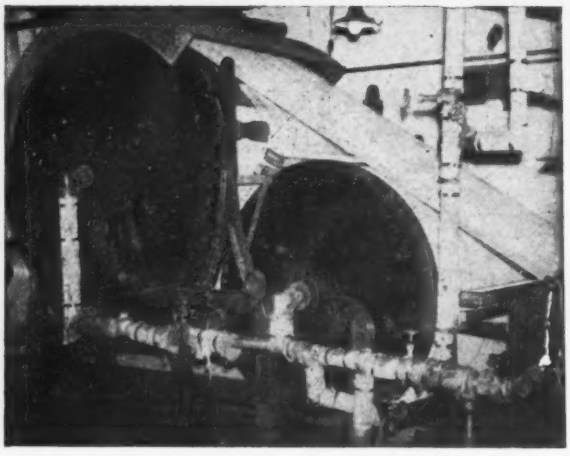

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Increased production —
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For Maintained Shrinkage—
Perfect Finish—Long Life

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→COMPRESSIVE SHRINKAGE←
BLANKETS

for use in shrinking fabrics to the *"Sanforized"* standard by the Compressive Shrinkage process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

PALMER BLANKETS—also available for your special requirements.

Write for information
or see our representative

F. C. HUYCK & SONS
KENWOOD MILLS
Albany 1, New York

dition which will add 5,000 spindles to the plant's present 15,000.

Swift Mfg. Co., Columbus, Ga., is taking bids for a one-story addition to its picker house. Robert & Co., Atlanta, Ga., are the architects.

Southern Webbing Mills, Greensboro, N. C., has completed an addition to its plant at a cost of more than $250,000 and currently is installing machinery which eventually will permit the firm to double its production. Twenty new looms, a new rubber covering machine, and a new finishing machine are being installed. The company produces elastic webbing for overalls, workmen's suspenders, and underwear.

Springs Cotton Mills, Lancaster, S. C., has begun construction on 200 homes for mill workers. The houses will be of brick and will contain five rooms and a bath. Cost is estimated at $1,546,000.

Swannanoa Textile Corp., Biltmore, N. C., was recently damaged by fire. The loss, placed between $75,000 and $80,000, was partially covered by insurance.

Statesville Cotton Mills, Statesville, N. C., has been purchased by Burlington Mills Corp., as provided in an agreement between Milton Herman, C. A. Sykes, and W. C. Sykes, representing the majority of Statesville common stock, and the Burlington Mills Corp. The Statesville plant is engaged primarily in production of jacquard fabrics and colored cotton yarns, having 150 cards and 15,400 spindles. Burlington expects to continue the sales-yarn activities of Statesville, but will co-ordinate the merchandising of jacquard fabrics with its decorative fabrics division.

Voit Rubber & Textile, Inc., Gastonia, N. C., has installed 36 looms. The plant manufactures heavy sheeting for the parent company, located in Los Angeles, Cal.

Woods Mfg. Co., Ltd., Wellington, Ont., plans a new plant at St. Lambert, Que., to be ready for operation in 1948. There will be complete modernization of the cotton mill in Welland, Ont.

Wilkes-Barre Lace Mfg. Co., Wilkes-Barre, Pa., has purchased the building and real estate of Textron, Inc's. Chadwick-Hoskins Mill No. 2, Charlotte, N. C., for $200,000. The Cordova, Ala., mill of Textron was not for sale as had been rumored. The Wilkes-Barre firm purchased the cotton weaving equipment of the No. 2 plant several months ago, while the rayon looms have been moved to other Textron plants.

Wool Mill News

John P. Baum, Dublin, Ga., has been authorized by the Office of the Housing Expediter to construct a $200,000 woolen-fabrics plant.

Botany Worsted Mills, Passaic, N. J., has changed its name to Botany Mills, Inc.

Dominion Woolens & Worsteds, Ltd., Hespler, Ont., is having estimates made on the erection of a mill on a five-acre site in Owen Sound, Ont. The building will have about 150,000 sq. ft. of floor space.

Filature Nicolas, Inc., St. Hyacinthe, Que., recently began operations in the spinning of fine worsted and woolen yarns for the weaving and hand- and machine-knitting trades. Machinery now in operation includes 576 spindles. Delivery is expected shortly of 2,000 S. C. A. C. spindles from France and 1,600 spindles of Saco-Lowell spinning equipment.

Hopkinton Woolen Mills, Hopkinton, R. I., suffered damage estimated at $100,000 as the result of a fire which wrecked the upper two floors of its four-story plant. Karl Myers of Norwich, Conn., owns the mill.

James Lees & Sons Co., Glasgow, Va., recently completed its $3,500,000 spinning mill and dye-house which provides for processing of wool. The plant is laid out for continuous operation in straight-line production on a single floor. All machinery is new.

Montrose Worsted Mills, Inc., Granby, Que., is now installing British machinery in its recently completed worsted-spinning plant, which is housed in a one-story addition containing 25,000 sq. ft. of floor space.

Rochambeau Worsted Co., Providence, R. I., has filed plans for a one-story and basement weave shed to be built at

ATTENTION SHIPPING MANAGERS!

Make yourself more valuable...turn out more work with less time and effort: Have a factory-trained D.-B. packing and marking man analyze your shipping room procedure. Profit by his suggestions. Others have. No obligation. See your phone book under "Stencil Cutting Machines." Or write Diagraph-Bradley Dept. S. 3745 Forest Park Blvd., St. Louis 8, Mo.

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Earn a Manufacturing Profit By Using the Best Machinery and Supplies

DUSTERS
PICKERS
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MULES
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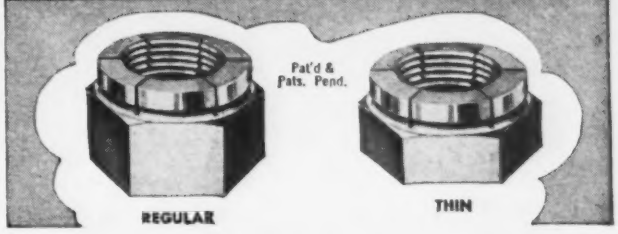
NAPPERS
CARD CLOTHING
NAPPER CLOTHING
GARNETT WIRE
LEATHER RUB APRONS
LEATHER CONDENSER TAPES

DAVIS & FURBER
NORTH ANDOVER, MASS.

THE ACCEPTED STANDARD

FLEXLOC



SELF-LOCKING NUTS

Free samples of our "Flexloc" Self - Locking Nuts — "Draper" or American Hex Standards—are yours for the asking.

"Flexloc" packs maximum usefulness in minimum space because it is rugged, self-locking, compact —and is therefore becoming increasingly popular and this applies alike to U.S.S. and S.A.E. thread series.

Every thread — including the locking threads — takes its share of the load.

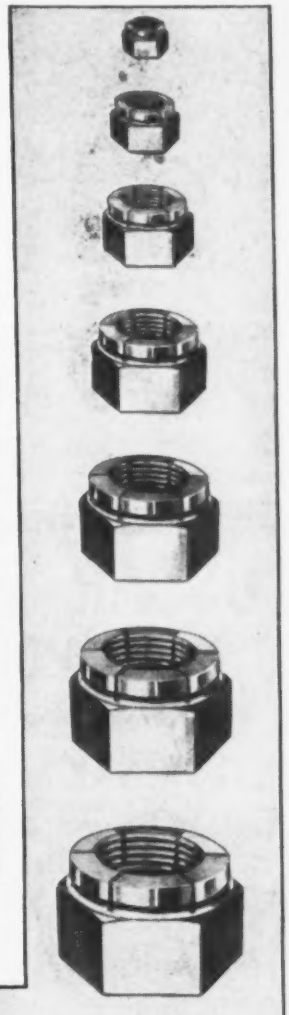
Covers a wide range of tolerances—from low #1 to high #3. Can be used over and over again without losing much of its locking ability.

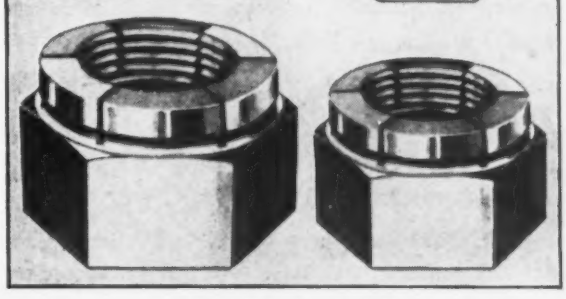
Being a "stop" nut, it stays locked in any position on a threaded member.

"Flexloc" Thin Nuts are especially popular, because their tensile is so high.

Sizes from #6 to 1" in diameter — MILLIONS IN USE. Can be made of all commercial metals such as Steel, Stainless Steel, Brass, Bronze, etc. Some of the largest mills have found them to cut maintenance radically.

Convince yourself with a few free samples





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Chattanooga, Tenn.

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617 Johnston Bldg.
Charlotte, N. C.

Thomas C. Assheton
11 West 42nd St., New York 18, N. Y.

King and Dearborn Sts. Charles A. Maguire & Associates drew the plans.

Salter Mills, Saugus, Mass., has added a wool scouring and carbonizing unit, with a processing capacity of 40,000 lb. a day.

George Sheard & Co., Ltd., Coaticook, Que., recently awarded contract for the erection of an extension to its mill. Cost is estimated at $50,000.

West Coast Woolen Mills, Ltd., Vancouver, B. C., is planning the erection of a plant in Vancouver. Cost is estimated at $60,000.

Rayon & Silk Mill News

American Bemberg Corp., New York, N. Y., made capital expenditures amounting to $131,000 during 1946 and is now considering a further program of replacement and modernization which will involve a more substantial expenditure of money.

Australian Plexon, Ltd., Sydney, Australia, has been formed in conjunction with Bradford Cotton Mills of Sydney, where a new plant will be erected to produce plastic-coated yarn. The Bradford mill, which spins, dyes, and finishes, will manage the new organization for making Plexon in Australia.

Avon Mills Co., Pawtucket, R. I., has recently been formed with Robert D. Marsden, president and secretary. Ernest McFall is treasurer. The plant is now in full production on fancy rayons and novelty fabrics.

Berwick Weaving Co., Berwick, Pa., has let to Bethlehem Steel Co., Bethlehem, Pa., the steel contract for a one-story addition reported to cost over $100,000.

Burlington Mills Corp., Greensboro, N. C., has received CPA approval to construct a new plant at Galax, Va., for the manufacture of upholstery and dress materials, at a cost of $143,000. Burlington has also received approval for a new one-story warehouse at its cloth finishing plant, Piedmont Heights, Burlington, N. C., to occupy 53,000 sq. ft. and cost $98,000.

Canadian Celanese, Ltd., Drummondville, Que., expects that its new plant being erected in Sorel, Que., will be completed by the end of 1947. The 400 x 450 ft. one-story plant will cost over $1,000,000. In the next 18 months, expenditures for plant and machinery at Sorel will be about $3,500,000.

Covington Weaving Co., Covington, Va., has been sold by Burlington Mills to William Klopman, who had been senior vice-president of the latter company. William Klopman & Sons, Inc., a Delaware corporation with principal office in Covington, Va., and Childrey Scott as agent, has been granted a certificate of authority to do a general textile-manufacturing and sales business.

Crompton-Shenandoah Co., Inc., Waynesboro, Va., will erect an addition at a cost of $73,379 to provide space for weaving women's-wear fabrics.

E. I. du Pont de Nemours & Co. has applied for a War Department permit authorizing construction of raw water intake works and dredging work in the Tennessee River at the site of its nylon yarn plant at Chattanooga, Tenn. Du Pont has started work this month on a $3,000,000 plant at Niagara Falls to manufacture adiponitrile, a chemical important in making nylon. The company has received CPA approval for a $772,000 expansion program at the Sabine River Works nylon salt plant, Orange, Tex.

Finewear Mfg. Co., Batesville, S. C., has completed plans for alterations on the buildings previously occupied by Batesville Mfg. Co., which will house its new plant. Job J. Mills, textile engineer of Greenville, S. C., was in charge of planning.

Hadley Mills, Inc., has been granted permission by the Office of the Building Expediter to construct a $330,000 plant at Taylorsville, N. C.

Lus-Trus Extruded Plastics, Inc., Ann Arbor, Mich., is now in production extruding Lus-Trus Saran monofilament. It is being produced in a variety of

WALDRON Processing Machines

For Textile

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and other processing operations

WALDRON machines are part of the picture of the fascinating new materials that are setting new standards of converting skill. Beauty, utility and durability are being imparted to fabrics with the aid of these modern machines. Investigate the possibilities for your product. Write for detailed information.

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Holders for all types of mules, frames, twisters and winders.

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Simplify Motor Maintenance

MOTOR reconditioning and repairs can add up to a sizeable expense. But Oakite cleaning can help cut these costs.

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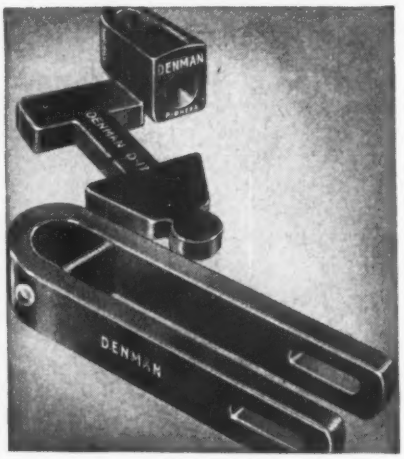

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colors and in sizes suitable for use by textile mills.

Marietta Mfg. Co., Marietta, S. C., expects to be in production soon in its plastic-fabric weaving plant. Raymond Johnson is president, E. S. Guest is vice president, and T. F. Guest is secretary-treasurer.

Marlin Narrow Fabric Co., Scranton, Pa., is now in operation making plain narrow fabrics woven of glass yarns, as well as cotton tape and rayon seam binding.

Meshi Sacks, Ltd., Ramat, Palestine, has about completed two additional rayon weaving mills which have 56,000 sq. ft. floor area.

North American Rayon Corp., Elizabethton, Tenn., made capital expenditures of about $574,000 during 1946 and is now considering an extensive program of replacement and modernization.

Paragon Textile Co., Harrisburg, Pa., expects to have ts weaving mill at Bethlehem, Pa., in operation by Aug. 1. The new plant will cost about $310,000, and about 275 looms will be installed.

Plaza Silk Mills, Inc., Beavertown, Pa., and **Joroco Silk Corp.**, New York, N. Y., have merged. The new company will be known as Plaza Mills, Inc., and will have offices in Beavertown and at 444 Fourth Ave., New York.

Robbins Cloth Mills, Inc., is engaged in an extensive program of enlarging and improving several departments of its plant at Robbins, N. C.

Textron, Inc., Providence, R. I., is reported to be negotiating for the purchase of Fisher Plastic Corp., Newton, Mass., which makes a variety of extruded and moulded plastics, including coated fabrics, furniture coverings, and plastic films.

Knitting Mill News

Alden Mills, Meridian, Miss., is now operating in a new location. Its former plant is being offered for sale at a price of $55,000.

Artcraft Hosiery Mill, Corinth, Miss., will erect an $85,000 addition.

William Carter Co., Barnesville, Ga., has received CPA approval for a construction program involving three projects and totaling $85,000. The program calls for a $19,717 addition to the mill, a $39,446 storage building, and a $23,950 office building.

Chadbourn Hosiery Mills, Charlotte, N. C., will build a large hosiery plant at Shelby, N. C., if and when machinery becomes available. The Full-Knit plant, a branch of the company which has been operating at Shelby for the last several years, is being abandoned because machinery ordered for the plant sometime ago cannot be secured. Apparently, this does not mean that plans for expansion at Shelby have been given up.

Chadis-Roth Knitwear Co., 118 Kneeland St., Boston, Mass., has been organized with capital of $50,000 to operate a mill for outerwear manufacture. Charles Chadis is president.

Conover Knitting Mill and **Warlong Glove Co.**, Conover, N. C., expect to have ready for occupancy by September the new building now under construction.

Davenport Hosiery Mills, Inc., Chattanooga, Tenn., has built up a reserve fund of $1,354,500 for the purchase of new equipment.

Dogwood Hosiery Co., Thomasville, N. C., has completed modernization plans which include a new building, additional machinery, and doubling the working staff.

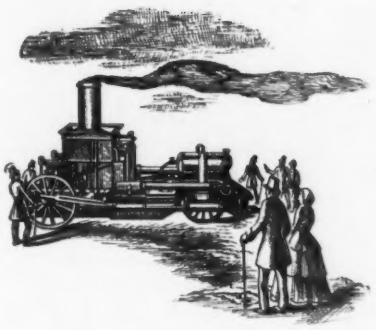
Durant Mfg. Co., Durant, Miss., a unit of Real Silk Hosiery Mills, Inc., Indianapolis, Ind., has awarded a contract for a new mill building to cost about $69,500. About $27,000 will be spent for air-conditioning equipmnt. J. W. Norwood is superintendent.

Earle Hosiery Co., Charlotte, N. C., plans construction of a $75,000 one-story building for dyeing and finishing operations.

Gurney Mfg. Co., Prattville, Ala., has spent $500,000 on building repairs and installation of modern knitting machines since purchasing the plant a year ago. The number of workers has increased from 100 to 300.

Helen Hosiery Mills, Helen, Ga., which recently began operations in a new mill employing 100 women, plans the opera-

Famous Firsts



THE FIRST PRACTICAL FIRE ENGINE in America was designed and built by A. B. Latta in 1853. Affectionately called the "Uncle Joe Ross," this engine weighed 5 tons, took 9 months to build and cost about $10,000. It was drawn by 4 horses with the help of its own power, and had a firebox and boiler similar to that of a locomotive. It threw from 1 to 6 streams of water and could throw a 1¾ inch stream a distance of 240 feet.

THE FIRST KNITTING MACHINE to produce sheer, perfectly fitting seam-free women's hosiery is the S & W DANCING TWINS Seam-free Nylon Machine, introduced by Scott & Williams in 1946. This outstanding machine has virtually revolutionized the market for seamless hosiery and has created a tremendous new field for the manufacturer and distributor of women's stockings. Here is the latest in a long list of "famous firsts" by S & W — all of which have made and are still making knitting history.

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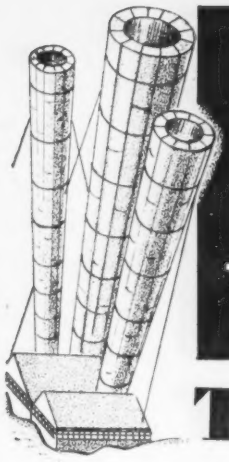

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Charles F. Rogers, Jr. — *Manager*

tion of a dye plant. This unit will employ 100 men.

Lehman Mill, Martinsville, Va., plans to install knitting machines to knit its own fabrics, as well as finish underwear and polo shirts.

Liberty Hosiery Mills Co., Liberty, N. C., has completed installation of a refrigerated air control system throughout its local plant, including the finishing department. The company has also received two new 51-gage full-fashioned machines that are being started up.

Mode Knitting Co., Chicago, Ill., has opened a branch plant in Muskegon, Mich. About $30,000 has been invested in equipment for the plant, which employs 16 people. The company plans to enlarge this operation when building restrictions are lifted. E. S. Stevens, formerly a foreman for Amazon Knitting Mills, is manager.

Nu-Maid Hosiery, Stroudsburg, Pa., has completed installation of new 400-needle knitting machines and 51-gage equipment.

Red Sox Hosiery Mill, Newton, N. C., which was nearly destroyed by fire on May 8, plans to resume operations in a new building when additional equipment can be obtained.

Regent Knitting Mills, Ltd., Montreal, Que., spent $514,575 for new machinery, buildings, and dwellings in 1946.

Stanfold Knitting Co., Princeville, Que., has changed its name to Princeville Hosiery Mills, Ltd. A. J. Lehoux is manager of the company.

Stuart Knitting Co., Martinsville, Va., has been formed to operate a knitting plant to manufacture children's underwear.

Veale-Gann Hosiery Mills, Inc., Durham, N. C., has been transferred from Boone, N. C., to Apex, N. C.

Valley Knitting Mills, Englewood, Tenn., which operated a branch in Etowah, Tenn., during most of last year, has consolidated that operation with the main plant in Englewood.

Waynick Hosiery Mill, Hendersonville, N. C., has begun the manufacture of 51-gage full-fashioned nylon hosiery.

Yadkinville, N. C.—Machinery is being installed in a new building at Yadkinville for production of hosiery and production is about to begin. Owners are Jake Brown and Dock Wooten.

Dyeing & Finishing Plants

Atlantic Dye Works Co., a New Jersey corporation organized in 1946, is continuing business at 80 George St., Paterson, according to A. J. Cohen, vice president. Recently, an older corporation by the name of Atlantic Dye Works, which later became a partnership, filed notice of dissolution.

Clarkesville Textile Corp., Richmond, Va., has changed its name to Clarkesville Finishing Corp. Karl Robbins is president.

D-J Skein Dyeing Corp., Brooklyn, N. Y., has filed plans for alterations and improvements in its building at 21-25 Moultrie Street to provide for expansion. George Alexander, Jr., Brooklyn, N. Y., is architect.

Kendall Co., North Smithfield, R. I., has asked erection bids for a two-story warehouse at its Slatersville, R. I., finishing plant. Cost is reported to be about $70,000. Charles T. Main, Inc., Boston, Mass., is architect.

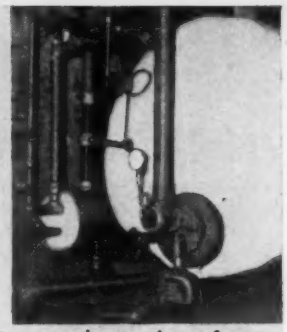
Rainbow Valley Dye Works, Inc., Burrillville, R. I., has been chartered with capital of $25,000 to operate a dyeing and finishing plant. I. Rabinovitz, 427 Park Ave., Woonsocket, R. I., is the incorporator.

Sayles Finishing Plants, Inc., Saylesville, R. I., has work underway for a one-story power plant. Project includes boilers and power house equipment. Westcott & Mapes, Inc., New Haven, Conn., are engineers.

Union Bleachery, Greenville, S. C., has been purchased by Aspinook Corp., Jewett City, Conn. and its affiliated companies. W. A. Broadfoot, president of the purchasing companies will become president of Union Bleachery. It is reported that A. W. Arrington, president of Union Bleachery, will be elected chairman of the board of directors.

U. S. Finishing Co., Norwalk, Conn., and subsidiaries during 1946 spent $357,964 in their modernization program.

THE LUXURY OF CORRECT TEMPERATURES



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The large storage heater is controlled by the Sarco TR 21 Temperature Regulator and drained by the Sarco float-thermostatic steam trap shown above. At the rear is a hot water converter for the heating system held to exact temperature by a Sarco 2430 temperature regulator.

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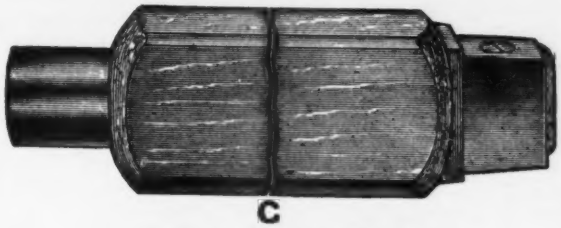

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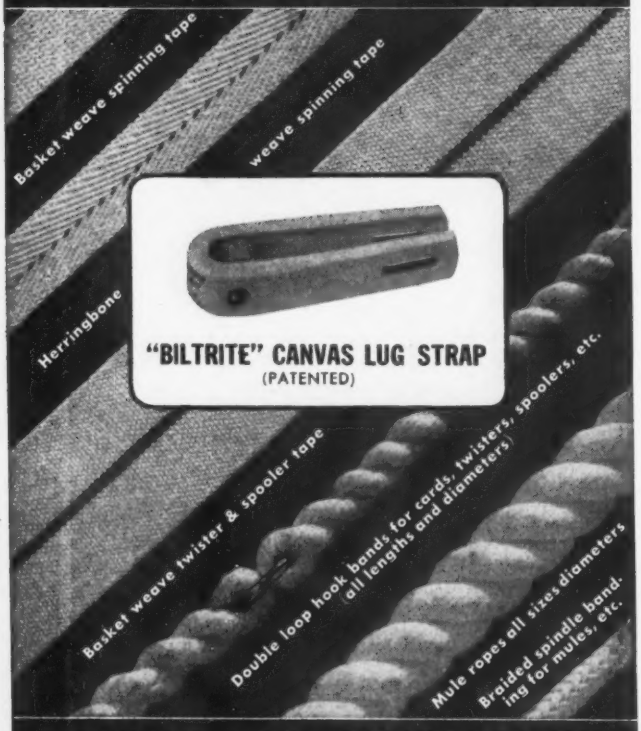
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Identify and safeguard your yardage at low cost. Quick and easy to use; permanent, boil-proof and dye-resistant.

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NEWS ABOUT *Men*

Archie O. Joslin has been elected president of M. Lowenstein & Sons, New York. He succeeds **Leon Lowenstein** who was named to the newly created post of chairman of the board. Mr. Joslin has been with the Lowenstein organization since 1928. He organized the Rock Hill Printing & Finishing Co., Rock Hill, N. C., and since the company's vertical integration, has been in charge of all production facilities.

William J. Erwin, formerly vice president and assistant executive officer at Republic Cotton Mills, Chester, S. C., is now chief executive officer. He succeeds **George M. Wright**, who resigned. **Jesse T. Crawford**, formerly with Aragon-Baldwin Cotton Mills, Whitmire, S. C., has been named general manager.

Frank C. Williams, formerly vice president and general manager of Roanoke Mills Co. and Patterson Mills Co., both of Roanoke Rapids, N. C., has been elected president and treasurer.

A. R. Cobb has been named director of operations for Gambrill & Melville Mills Co., Bessemer City, N. C. He was formerly superintendent, in which position he was succeeded by **J. V. Tarpley**, assistant superintendent.

L. C. Hicks, Sr., for the last 16 years with the Archer Hosiery Mills, Inc., Columbus, Ga., as auditor, treasurer, vice president in charge of production, and most recently as executive vice president, has announced his resignation from the firm. Mr. Hicks has resigned in order to devote his time to the Hicks Battery Mfg. Co., of which he is president.

W. S. Burrill recently retired as president of Cosmos Imperial Mills, Ltd., Hamilton, Ont., and was elected chairman of the board. He is succeeded by **A. V. Young**, who is also president of Hamilton Cotton Co., Ltd. J. V. Young, vice president of Hamilton Cotton Co., Ltd., was elected vice president and general manager of Cosmos Imperial Mills, Ltd.

Joins TEXTILE WORLD

WILLIAM A. NEWELL, who has joined TEXTILE WORLD as assistant editor, is a graduate of N. C. State College textile school, a former Army captain, and a former employee of Farr Alpaca Co., Queen City Cotton Co., and the Ashland Corp. Mr. Newell was editor of the "Textile Forum" and has been a contributor to TEXTILE WORLD as well as to other textile publications. He is married, has one child, and will live in the New York area since his duties will be in the New York office of the magazine. His father is also a textile man and is associated with the Ashland Corp.

John Bancroft, Jr., has been elected chairman of the board of Joseph Bancroft & Sons Co., Wilmington, Del. **W. Ralph MacIntyre** has been named president of the company.

Jerman L. Fischer, president and chairman of the board of Fabrica Victoria de **Puente** Alto, S.A., which is building a filament-rayon plant near San Antonio, Chile, is visiting the United States and will remain in New York for about one month. Oscar Kohorn, & Co., Ltd., New York, N. Y., is erecting the new plant, which will have a capacity of 10,000,000 lb. annually.

Henri Vande Vilde, managing director of Felt & Textiles, Ltd., Australia, recently visited

THE

WINNING

PREMIUM YARN

Spun Rayon
and
Blends

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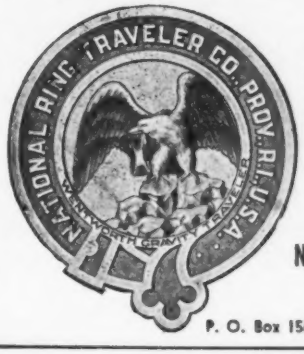

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United States Standard
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NOVELTY YARNS

Victoria, B. C., to confer with directors of the new plant established there. The plant will get its wool supply from British Columbia, Australia, and South America, and will ultimately use 1,000 workers.

Carl A. Johnson, formerly with Lonsdale Co., Blackstone, Mass., has become general manager of Fisher Mfg. Co., Fisherville, Mass.

A. H. Clarke has been elected a vice president of Bemis Bros. Bag Co., St. Louis, Mo. He will head the newly formed general production department. He has been manager of the Bemis cotton mill in Indianapolis, Ind.

Chester Woodward has been appointed superintendent of the China mill of Textron's Suncook, N. H., division. He is a native of Woonsocket, R. I., and has been serving as night superintendent.

Louis D. deLoach, executive assistant to E. Lee Skipper, vice president in charge of manufacturing for Springs Cotton Mills, Lancaster, S. C., has resigned to become resident manager of the Glendale, S. C., plant of D. E. Converse Co.

D. C. Anderson has succeeded **F. T. Newberry** as manager and superintendent of Montgomery Cotton Mills, Montgomery, Ala.

George J. Swift has been elected a vice president of Leaksville Woolen Mills, Inc., Charlotte, N. C. Mr. Swift recently resigned as manager of the blanket department of American Woolen Co.

George A. Ramsden, plant manager of Nemasket Mill, Taunton, Mass., has been named general superintendent of Textron-Manville, Providence, R. I. He succeeds **James A. Toole. Leroy Lamb** will fill the position of plant manager at Taunton on a temporary basis in addition to his duties in mechanical developments for Textron. Mr. Lamb resigned as treasurer and general manager of Nonquit Mills, New Bedford, Mass., in 1946, to join Textron.

George C. Riegger has been promoted from comptroller to assistant treasurer of Chicopee Mfg. Corp., Manchester, N. H.

Robert E. Smith, Jr., has been appointed manager of the towel development department of Fairfax Mill, Fairfax, Ala. **Virgil Hampton** will succeed him as production manager at the mill.

Leroy Swebal has been named general manager of Everlastic Corp., division of Burlington Mills Corp. He succeeds **J. G. Pottinger,** who has resigned. Mr. Swebal was formerly attached to the Greensboro, N. C., unit of the Burlington organization, working on special assignments.

Grier W. Whitesides and **Earl Rhyme** are constructing a two-story building near Lincolnton, N. C., in which they will operate an upholstery plant.

Harry E. Katzenmoyer is new vice president and general manager of Holston Mfg. Co., Knoxville, Tenn., makers of men's and boys' hosiery. The post of president was not filled at the annual directors' meeting. **Lucien Green** was elected secretary-treasurer. Mr. Katzenmoyer has been president of Chipman-La Crosse Mills, Henderson, N. C.

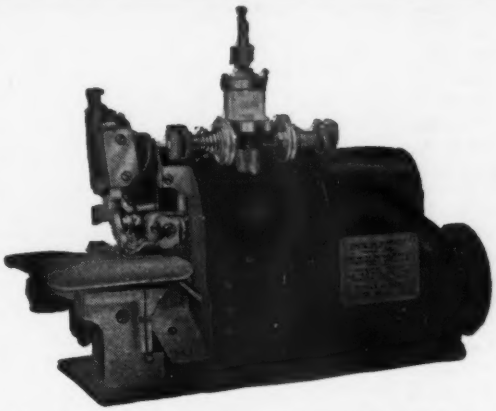
William Margolis has resigned as production manager of Brunswick Knitting Mills, San Francisco, Calif.

Robert Poisson has been appointed assistant to the vice president at Pepperell Mfg. Co., Boston, Mass.

Richard H. Tuttle, manager of the Zion, Ill., plant of Marshall Field & Co.'s Fieldcrest Mills division, has been transferred to Spray, N. C., as director of research and quality control of the company's plant there. He succeeds **P. E. Smith,** who resigned. Mr. Tuttle's former position has been taken over by **E. W. Medbery,** formerly a consulting industrial engineer.

Drummond Giles, vice president and director of Courtaulds, Ltd., Cornwall, Ont., has been appointed general manager of the plant in Cornwall, while **G. W. Scarth,** a director and secretary of the company, becomes assistant general manager. **R. A. Douncey** is the new treasurer.

J. R. Dunkerly recently joined Dominion Textile Co., Ltd., Montreal, Que., as assistant to **J. G. Kershaw,** head of the research and development department.



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The United Reed & Harness Co. will be operated as a manufacturing unit for the present. All business should be conducted through the Jacob Walder Co.

NEWS ABOUT MEN

Harry Seligman, textile technician from St. Gall, Switzerland, has joined the staff of William Skinner & Sons in New York.

C. H. Forsaith, formerly superintendent of Nashua Mfg. Co.'s Jackson Mills, Nashua, N. H., is now chairman of the executive committee of the company.

C. W. Singer, formerly assistant manager of the towel department of Fieldcrest Mills, Fieldale, Va., is now manager. **C. E. Moulton,** manager of the sheet department, will also head lace tablecloth department.

Charles E. Lyons has been named vice president of Warrenton Woolen Co., Torrington, Conn.

Henry E. Miller has assumed his new duties as general manager of Profile Cotton Mills, Jacksonville, Ala. He was formerly division superintendent of the Riverside Division of Dan River Mills, Danville, Va.

I. P. Crowther who has been associated with Deering, Milliken & Co., New York, N. Y., since 1925, has been named a vice president of the company.

James H. Adams has been named quality production manager at William Skinner & Sons, Holyoke, Mass. Prior to joining Skinner, he was assistant manager of Jaunty Fabrics Corp., Scranton, Pa.

J. W. Greene, for the last year personnel manager of Hartsville Cotton Mills, Hartsville, S. C., will be transferred back to Monarch Mills, Union, S. C. Mr. Greene will be with Monarch's personnel department in Union, and **Frank West,** who has been with that department, opens a new phase of that work for the Monarch Mills.

E. H. Hines has been named manager of the Elberton, Ga., division of United Rayon Mills. He replaces **Kenneth McCaleb** who has accepted a position in Salisbury, N. C.

Edwin W. Kaler has been made vice president of Archer Mills, Inc., Columbus, Ga. He has been with the company since November, 1945.

Frederick H. Myers has resigned as assistant manager of Windsor Print Works, North Adams, Mass., to accept a similar position at R. W. Bates Piece Dye Works, Garnerville, N. Y.

J. A. Keykoop has been appointed plant manager, and **J. D. W. Hubbeling, Sr.,** chief chemist, for the new plant of American Enka Corp., now being constructed at Morristown, Tenn.

Jack Newton has become a sales technician with Springdale Finishing Co., Inc., Canton, Mass. For the last 11 years he was with Fairforest Finishing Co. as plant manager.

Charles H. Dyson has been elected treasurer and **Robert B. Hamblett,** clerk, of the Nashua Mfg. Co., Nashua, N. H.

Verney Corp., Boston, Mass., has elected **John R. McLane** and **Harry C. Robbins** as directors, **Eric G. Verney** as comptroller and **A. George Bayne,** assistant secretary.

R. H. Coleman is operating the new Test Hosiery Mill in the basement of Burke Hosiery Mill, Hickory, N. C. The plant knits men's wrap anklets.

Bronislaw Prokuski has been appointed superintendent of spinning and weaving of Waumbec Mills, Inc., Manchester, N. H. Mr. Prokuski has been with Waumbec Mills for the last ten years as overseer of weaving.

D. W. Quinn, formerly assistant overseer of weaving at Pelzer Mills, Pelzer, N. C., is now general overseer of weaving.

C. S. Smith has been promoted to superintendent of the Limestone and Hamrick units of the Hamrick group of mills, Gaffney, S. C., succeeding **L. R. Champion,** who has resigned.

Clarence O. Smith has resigned as overseer of spinning at Marion Mfg. Co., Marion, N. C., and has become overseer of spinning at Carolinian Mills, High Shoals, N. C.

R. D. Buie, new superintendent of the Newton Rayon Mill, Newton, N. C., has arrived to enter upon his new duties. He succeeds **C. H. Sanders,** who has been transferred to the plant of the company at Bristol, Tenn.

James H. Burton, Greensboro, N. C., will become con-

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GREENVILLE, S. C. — FALL RIVER, MASS.

nected with safety work in the transportation and shipping department of Burlington Mills Corp., Greensboro.

Jack Byam has been promoted to the post of superintendent of finishing with Chicopee Mfg. Co., Chicopee Falls, Mass., a subsidiary of Johnson & Johnson, Inc.

J. A. Byars has resigned his position as plant superintendent of Avondale Mills, Pell City unit, Pell City, Ala., to accept the position of superintendent of The Trion Co., Trion, Ga. **Harold Clark,** who has been superintendent of the Sallie B. unit of the Avondale Mills, Sylacauga, Ala., has been selected to succeed Mr. Byars. **Dwight Epperson** has been appointed superintendent of the Sallie B. plant at Sylacauga.

Henry Caldrice has become overseer of finishing for the North Star Woolen Mills, Lima, Ohio.

Charles Holland has resigned as overseer of carding at Gaffney Mfg. Co., Gaffney, S. C., to become assistant superintendent of Monarch Mills, Lockhart, S. C., plant. He has been succeeded by **George T. Rankin,** formerly with Goodyear Clearwater Mills, Cedartown, Ga.

H. M. Jackson has resigned as superintendent of the No. 4 plant of Pacolet Mfg. Co., New Holland, Ga.

W. D. Shepherd has resigned as overseer of carding at Henderson Cotton Mills, Henderson, N. C., to become assistant superintendent of Hardin Mfg. Co., plant No. 2, Rock Hill, S. C.

Martin Curtis, formerly overseer of carding at Moorehead Woolen Mills, Corinna, Me., has accepted a similar position with Homestead Mills, West Swanzey, N. H.

Peter D. Stalker, former superintendent of Assabet Mills of American Woolen Co., Maynard, Mass., has accepted a position with Atlantic Mills of A. D. Juilliard & Co., Inc., Stottville, N. Y.

Leon H. Tompkins has been appointed purchasing agent in charge of machinery, chemicals, paper supplies, office supplies and trim materials for William Carter Co., Needham Heights, Mass.

Obituary

John P. Wright, 66, president and a founder of Delaware Rayon Co. and New Bedford Rayon Co., and head of Continental-Diamond Fibre Co., died recently at Wilmington, Del. Mr. Wright was also president of Haveg Corp., Marshallton, Del., and Diamond State Fibre Co., Ltd.

Barney Barton Hayes, 72, of Lenoir, N. C., died recently. He was head of a chain of textile plants, including Caldwell Cotton Mill Co. and Hudson Cotton Mfg. Co. of Hudson and Moore Cotton Mill Co., Inc., and Steele Cotton Mill Co., of Lenoir, N. C. He as president of the latter and secretary and treasurer of the other three mills.

Walter Heyer, 58, president of Heyer Chemical Co., Chicago, died Apr. 20.

William B. Bachof, president of Spool Cotton Co., New York, died recently in Montclair, N. J.

William McNairn Shaw, 78, president of Canada Spool & Bobbin Co., Walkerton, Ont., died Mar. 5. Mr. Shaw had been with that company for the last 45 years.

Jacques W. Hamm, 82, one of the founders of Desurmont Worsted Co., now Riverside Worsted Co., Inc., Woonsocket, R. I., died May 2 at his home in Providence, R. I.

Charles M. Kissel, 53, president of Chicago Curtain Mfg. Co. died May 1 in Chicago.

Louis Katler, 74, proprietor of Hampden Woolen Co., Springfield, Mass., died Apr. 16.

Max Mintz, 63, proprietor of Mintz Textiles, Worcester, Mass., for 20 years, died recently.

W. N. Williams, 69, Cherryville, N. C., in the textile business for 56 years, who was head of Hanover Mill and Rex

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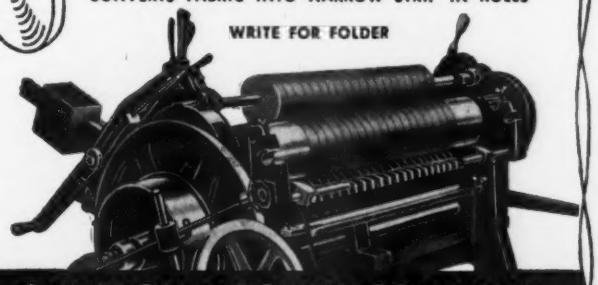

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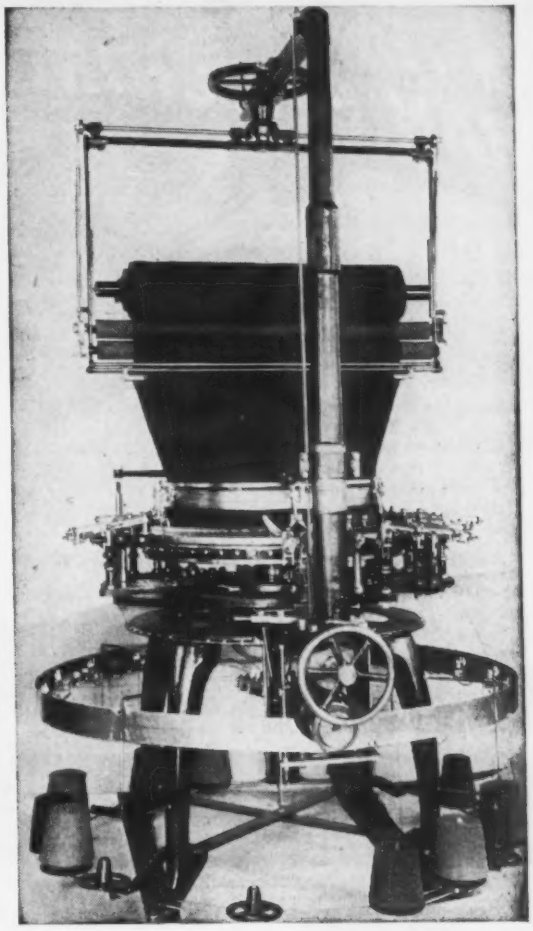

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SPINDLE TAPE LACING EQUIPMENT

Lace spindle tapes 10 times faster with Clipper No. 25 Spindle Tape Hooks. Tapes can be prepared in advance so frame is shut down only long enough to place new tape on the pulleys and join ends with connecting pin. Tapes run true—last longer—run smoother—require less tension—VIBRATION IS ELIMINATED

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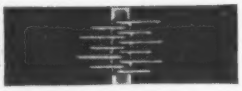
Lace condenser tapes with Clipper No. 25 Condenser Tape Hooks. Clipper laced tapes, prepared in advance, can be installed in a fraction of the time required for endless tapes. Tape may be purchased in the roll at considerable saving.



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NEWS ABOUT MEN

Mills at Gastonia, N. C., from 1939 to 1946, died Apr. 2.

Stuart Armfield Royals, 54, Kernersville, N. C., hosiery mill owner, died Apr. 14.

Thomas H. Kinney, 80, organizer of three knitting mills, including the Bally Ribbon Mills, Bally, Pa., died Apr. 30 in Allentown, Pa.

Frank E. Arnzen, 58, formerly vice president of the Fall River Bleachery Co., Lincoln Bleachery & Dye Works, Lonsdale, R. I., and the Lonsdale Co., died in Fall River, Mass., Apr. 13. He served as consultant on textiles for the U. S. Navy during the war.

J. Levi Meader, 68, former agent of Gonic Mfg. Co. in the Gonic section of Rochester, N. H., died Apr. 10. He was mayor of Rochester in 1917 and had served in the state legislature.

Arthur Cleveland Goodwin, 62, purchasing agent for Proximity Mfg. Co., Greensboro, N. C., for the last 14 years, died Apr. 18 in Winston-Salem, N. C. He had been connected with Proximity for 27 years.

David M. Conn, 57, hosiery mill agent, died Apr. 5 in New York. He was a general partner in Kingly Hosiery Co., New York.

William M. Wentz, 45, a member of the technical laboratory staff of E. I. du Pont de Nemours & Co.'s organic chemical department, died at Worcester, Mass., recently. Mr. Wentz was widely known for his research on dyestuffs application.

Miss Dorothy M. Hobson, assistant treasurer of Pepperell Mfg. Co., Boston, Mass., died Apr. 13. Miss Hobson had been with Pepperell for 20 years and was a certified public accountant and a member of the bar.

Arthur Fell, 72, died Apr. 16 at Natick, R. I. He was employed by Crompton Co., Crompton, R. I., for 30 years, and was foreman of the singeing department for a number of years.

Walter E. Nutter, Sanford, Me., purchasing agent for Goodall-Sanford, Inc., died May 5. He was 57 years and a brother of William S. Nutter, originator of Palm Beach cloth and F. Everett Nutter, both vice presidents of the company.

Frank E. Arnzen, 59, vice-president of Lincoln Bleachery & Dye Works, Lonsdale, R. I. and also of the Fall River Bleachery, died Apr. 14.

Samuel Holt Garrett, executive vice-president of Erwin Yarn Co., Philadelphia, Pa., died recently at Margate City, N. J.

Samuel Baily Eskridge, 75, superintendent of Double Shoals Mfg. Co., Double Shoals, N. C., for 25 years, having retired in 1944, died recently.

John Henry Spears, a departmental superintendent of Corriher Mills, Landis, N. C., for 22 years, until he resigned recently due to ill health, died Apr. 17.

Malcolm Rogers, 70, died Apr. 28 at Hamilton, R. I. He was for many years boss dyer in Hamilton-Webb Co., Hamilton, R. I.

Gilbert Bell, 54, superintendent of manufacturing at Merrimack Mfg. Co., Lowell, Mass., for the last eight years, died recently. He was at one time associated with Paul Whitin Mfg. Co., Northbridge, Mass. and Griswold Mfg. Co., Turners Falls, Mass.

Charles B. Jennings, superintendent of carding at Botany Mills, Passaic, N. J., died recently. He was at one time superintendent of the Chilton Co., Webster, Mass., and was formerly New England manager of the wool department of Tidewater Oil Sales Corp.

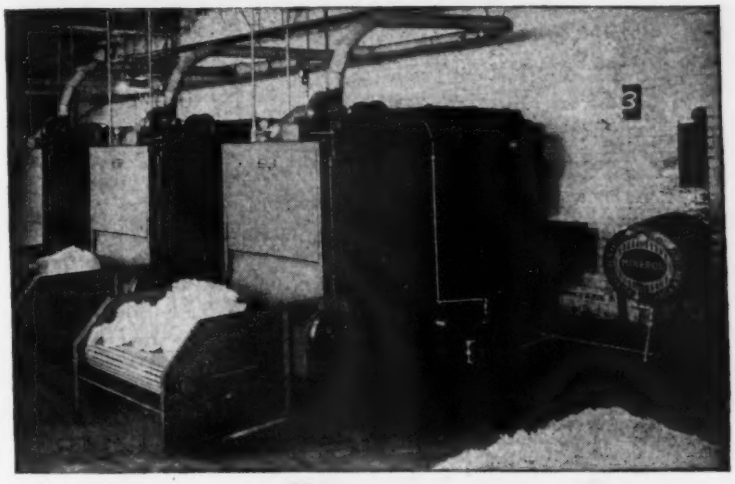
Angus P. Mountain, 44, superintendent of Dumbarton Woolen Mills, Sangerville, Me., died recently.

Joseph L. Sherrill, 62, superintendent of Spencer Mountain Mills, Spencer Mountain, N. C., died Apr. 23 at his home in Gastonia, N. C.

Edgar L. Craver, 54, Salisbury, N. C., formerly assistant superintendent of North Carolina Finishing Co., who about three years ago formed Craver Mfg. Co., Salisbury, died May 5 of a heart attack.

John William Marshall, 80, for 30 years with Charlottesville Woolen Mills, Charlottesville, Va., died Apr. 29.

MINEROL FIRST and FOREMOST CONDITIONING AGENT for Textile Fibres.



● **MINEROL** is a prepared agent for conditioning textile fibres..a systematic Process of Spraying Natural and Dyed Raw Stock. • **MINEROL** helps to separate long fibres from the short. It saves *good fibres* and prevents waste. It makes fibres more supple..more pliable. • **MINEROL** provides *control* of conditions caused by static electricity. It protects the cards and preserves the wire. • **MINEROL** prevents Dust and Fly..safeguarding health and insuring better working conditions. • **MINEROL**..as a conditioner is more urgently in demand thru the increased use of staple Cut Rayon and its varied, combinations with cotton, wool and other fibres.

BRETON MINEROL PROCESS PATENTED

BORNE SCRYMSER COMPANY

Originators of the BRETON MINEROL PROCESS for CONDITIONING FIBRE

ELIZABETH, N. J. CHARLOTTE, N. C.

NEW ENGLAND REPRESENTATIVES

A. M. KNIGHT, West Yarmouth, Mass. | W. M. DYNES, West Springfield, Mass. | S. T. DOUGLAS, JR., Westwood, Mass.

SOUTHERN REPRESENTATIVES

R. C. YOUNG, Mgr., Charlotte, N. C. | JOHN FERGUSON, LaGrange, Ga. | W. E. SMITH, Charlotte, N. C.

ROME SOAP MFG. CO.

MANUFACTURERS OF

Textile, Laundry

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Special Soaps

ROME, N. Y.

WRITE US FOR SAMPLES AND QUOTATIONS

D. R. KENYON & SON

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and DRYING

PENICK & FORD, LTD., INCORPORATED

CORN STARCHES, DEXTRINES, GUMS, CORN SUGARS & SYRUPS

NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John: Let's order new Douglas Spunray Gum for warp sizing spun rayons, spun acetates and mixtures. Understand protects yarns like standard starches yet desizes completely in soap and water.

Jim

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

WANTED

for leading

CLAIM ADJUSTER

New York City rayon converter.

Should be young man with negotiating ability, technical training in weaving, dyeing. State complete information as to schooling and industrial experience, references.

Address

P-202, Textile World
330 W. 42 St., New York 18, N. Y.

SUPERINTENDENT FOR SOUTHERN RAYON WEAVING MILL

Unusual opportunity for capable man having thorough practical preparatory and weaving experience with filament yarns. Excellent salary and profit participation.

State Age, qualifications and experience.

Replies held in strictest confidence.

P-261, Textile World
330 West 42nd St., New York 18, N. Y.

PROFESSIONAL SERVICES

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorneys

Patent and Trade-Mark Practice before U. S. Patent Office.
Validity and Infringement Investigations and Opinions.
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ABERT CO.
Consultants on Textile Machinery

Complete Installation and Operation of Cotton and Wool Spinning Plants
Also, Machinery and Supplies for Weaving, Spinning & Twisting.
Languages—Spanish & French.
92 Fulton St., N. Y. 7, N. Y.

ROBERT WILKINSON
Fabric Designing Service

Analysis of yarns and fabrics.
Plain, dobby and boxloom weaving drafts made from cloth or written information.
Jacquard designs made from cloth or sketches.
34 Bank St. New Bedford, Mass.

Weaving Mill Superintendent

As assistant to plant manager. Textile school graduate preferred, modern well-established rayon weaving mill in Pennsylvania. Practical weaving and preparatory experience essential. State complete background, qualifications, age, and salary. Steady position and fine opportunity for capable man. Replies will be held strictly confidential.
P-201, Textile World
330 West 42nd St., New York 18, N. Y.

EXPERIENCED SLASHER

Man with practical experience on rayon or cotton slasher. Must be capable of handling open type, double hook reeds. State age, supervisory ability and expected wages. Excellent opportunity with rapidly expanding organization.

P-232, Textile World
330 West 42nd St., New York 18, N. Y.

POSITIONS VACANT

(Additional Position Vacant ads on page 283)

MAN EXPERIENCED on inside work. Double woven machines. National firm of long established record in the knitting field. Splendid opportunity for advancement for the man who qualifies. Write Double Woven Corp. of America, Sherwood & Reeve Street, Dunmore (Scranton) Pa.

BRAIDER FOREMAN experienced on novelty braids wanted to take complete charge of small New York plant. State experience and salary desired. M. L. 206-7th Street, Brooklyn, 15, New York.

WANTED ASSISTANT Superintendent dyeing and print works. We expect the successful applicant to have substantial experience in either dyeing or printing and in handling of help. Give full history in first letter. P-263, Textile World, 330 W. 42nd St., New York 18, N. Y.

APPLICATIONS INVITED for important buying agency. Reputable old established London exporters with world-wide connections, principally interested in woolen, worsted, and silk piece goods, desire to appoint an experienced resident buying agent. Applicant must be well connected with leading sources of supply. Excellent prospects for extensive trade. Write Box PB893, Deacon's Advertising, 36 Leadenhall—Street, London.

SKEIN YARN dyer on wools, blends of wool and rayon and rayon yarns. Wonderful opportunity for right party. Must be steady worker. State full particulars—confidential. P-264, Textile World, 330 W. 42nd St., New York 18, N. Y.

CHEMIST-PROGRESSIVE Dye and Print Plant in Metropolitan area wants chemist with experience in dyeing, printing and finishing. Excellent opportunity for right man. All applications confidential. P-265, Textile World, 330 W. 42nd St., New York 18, N. Y.

WEAVE ROOM Foreman wanted for night shift in rayon and silk plant in Virginia. Permanent position and excellent opportunity for advancement. Send full particulars to P-266 Textile World, 330 W. 42nd St., New York 18, N. Y.

THROWSTER FOREMAN wanted with experience in throwing silk, rayon, and nylon for plant located in Virginia. Send full information to P-267, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

PERSONNEL MANAGER. Many years practical experience in Southern Textile Plants plus recent college course in modern personnel management. PW-141, Textile World, 330 W. 42nd St., New York 18, N. Y.

YOUNG MAN, veteran, with general textile background, plus several years (woolen) sales experience desires position with opportunities. Navarre 8-2143, Brooklyn, N. Y., M. J. Rose.

Available

EXECUTIVE'S ASSISTANT

Phila. Textile Institute graduate with 13 years practical experience in shaft and Jacquard fabrics. Well versed in fabric designing, layout, costing, analysis, production control and mill management. 34 years of age.
Apply PW-211, Textile World,
330 W. 42nd St., New York 18, N. Y.

POSITIONS WANTED

TEXTILE TECHNICIAN, 36, wide experience in cotton spinning. Also experience, plant erecting trough production. American and European machinery knowledges. Can furnish references. PW-184, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER DYEING general experience all types fibers. Textile school training and laboratory experience as demonstrator. Willing to go anywhere. J. I. Hayward, 58 Marshall Street, Needham, Mass.

GRADUATE ENGINEER with considerable experience in industrial relations and engineering, time and motion study, incentive plans, job evaluation, labor disputes, union contracts and arbitration in textile and related industries, desires change. Prefer South. Address PW-185, Textile World, 330 W. 42nd St., New York 18, N. Y.

OVERSEER OF woolen finishing, men's and women's wear, all classes. Also experienced on cotton back knitted overcoating. Twenty-two years experience, now employed, desires change. Reference from present employer. PW-268, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

MANAGER, WITH broad experience in narrow fabrics and woven labels, desires connection where capabilities are appreciated. Available on short notice. All replies confidential. Appointments arranged any time, anywhere. Write PW-269, Textile World, 330 W. 42nd St., New York 18, N. Y.

ARE YOU looking for a good narrow fabrics loomfixer with executive ability? Want to know what you have to offer. PW-270, Textile World, 330 W. 42nd St., New York 18, N. Y.

TECHNICIAN, B.S. now employed as product development engineer desires change. Broad experience in testing ranging from cordage fibers to knitted, woven, and pile fabrics. PW-271, Textile World, 330 W. 42nd St., New York 18, N. Y.

ENGINEER, INDUSTRIAL. Graduate, licensed, professional. Available for part-time work installing or checking operating and production methods, incentive plans, quality controls, training systems, job evaluation, labor relations. Former chief, large rayon corporation. Highest references. South preferred. PW-272, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE ENGINEER, 29, textile school graduate with 5 years experience supervisor in textile testing and research work plus 3 years experience in textile purchasing, mill production scheduling and quality control work. Able and aggressive, interested position with opportunities advancement. PW-273, Textile World, 520 N. Michigan Ave., Chicago 11, Ill.

YOUNG PROGRESSIVE assistant superintendent of rayon weaving plant, now employed, wishes greater responsibilities. Splendid educational and technical background. Experienced wide range fine goods and machinery. Sober, capable manager with creative ability. New England territory preferred. Replies strictly confidential. PW-274, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITION WANTED: Textile adviser and trouble shooter. Sixteen years experience in executive capacity, dyeing, finishing, scouring, carbonizing on woolens, worsteds and allied fibres. College and textile school graduate. Will consider position in United States or South America. Write PW-275, Textile World, 330 W. 42nd St., New York 18, N. Y.

EXPERT ON most types of knitting machines with broad experience both in U. S. and abroad. Also first class machinist with engineering background. Can build machines and develop improvements. Available immediately. PW-276, Textile World, 330 W. 42nd St., New York 18, N. Y.

TEXTILE EXPERT, 40 years as Superintendent and foreman with scouring, carding, combing. Seeks position or good job, with reliable firm. Erect grind and take professional care of any kind of machinery. References. Address Squire Kershaw, P. O. Box 317, Sloatsburg, New York.

TEXTILE ADMINISTRATIVE Executive conversant all phases cotton textile manufacturing, finishing, dyeing and printing desires connection preferably with progressive finishing, dyeing and printing concern. Would consider sales ethical line chemicals related to textiles. Now employed close corporation desire change for future advancement. Age 34. Married, two children. Minimum start $6,000.00. PW-281, Textile World, 330 W. 42nd St., New York 18, N. Y.

(Continued on page 284)

ADDITIONAL EMPLOYMENT ADVERTISING ON PAGES 282 AND 284

MEN WANTED
POSITIONS OPEN

Rayon weaving mill manager (South)
Silk throwing plant superintendent
Cotton yarn mill superintendent
Woolen and worsted stylers
Manager paper fibre matting plant
Superintendents, overseers and second hands worsted yarn mills, French, Bradford systems
Head colorist and head printer for large successful print works
Assistant superintendent woolen mill (West)
Cordage-rope mill manager (So. Amer.)
Cotton fabric development man for New York City
Knitting mill superintendents
Assistant superintendent woolen yarn mill, one strong in carding
Man for laboratory also demonstrate adhesives
Assistant superintendent worsted cloth mill
Textile school graduates
Head examiner, worsteds and woolens
Industrial engineer $5,000-$6,000; time study men
Rayon finisher for demonstrating
Weaving overseers, rayon and cotton
Boss cutter for knitting mill
Salesman to sell wool, shoddies, new and old wool stock, wool rags, wool clips and sweater stock in South, Mid West and Far West
Overseers for woolen and cotton carding (several)
Chemical salesmen and demonstrators
Textile school graduate with cotton manufacturing experience for position as salesman (So. Amer.)
Assistant in selling office of textile machinery firm
Salesman for cotton carding and spinning machinery, Southern states
Boss Weavers and loom fixers (cotton—foreign)
Boss finishers, woolens and worsteds
Boss spinners, mules and frames
Boss knitter also fixer, Banner machines
Boss dyers for yarns and piece goods, cotton, rayon, acetates, etc.
Chemists and colorists
Foreman for boiler room
Tricot knitting machine fixer
Mechanic-fixer Wildman, Brinton and Supreme machines
Laboratory men for mills and chemical concerns
Worsted-woolen designers
Foreman hosiery seaming and looping
Master mechanics and plant engineers
Mechanical design draftsman
Overseer cotton spinning for salesman
Cloth room overseers
Sewing Machine fixers

We invite correspondence (confidential) with mill executives seeking new positions and employers seeking new executives.

Charles P. Raymond Service, Inc.
294 Washington St. Boston, Mass.
Over 45 Years Confidential Employment Service for Textile Mills

---

WANTED

HEAD MECHANIC OR OVERSEER

To supervise and repair nules and wool cards in established South American mill. A good opportunity for the proper man.

P-235, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE SCHOOL GRADUATE
As Assistant to plant manager

In modern rayon weaving mill. Pennsylvania location. good opportunity long established firm. State complete background, qualifications, and salary. Our employes notified of this advertisement.

P-151, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

MECHANICAL ENGINEER

for progressive Eastern plastic manufacturer, experienced with the design and operation of rayon and synthetic fibre equipment, especially winding and yarn packaging. Write, giving full particulars. All replies will be held confidential.

P-260, Textile World
330 West 42nd St., New York 18, N. Y.

TEXTILE ENGINEER

A man who has technical training and practical experience in the construction of narrow fabrics and thread and cord. Must also have experience in grading same. Salary open. Apply

P-247, Textile World
330 West 42nd St., New York 18, N. Y.

OPPORTUNITIES IN LATIN AMERICA

One of America's Largest Textile Firms Offers Outstanding Opportunities in Latin American Countries for High Calibered Men Who can Qualify for the Following Positions:

SUPERINTENDENT For C&K and Draper Rayon Weaving Plant, complete with Preparation, Throwing and Finishing

OVERSEER—Rayon Weaving with Loom Fixing Experience

OVERSEER—Preparation and Rayon Preparatory and Throwing

RAYON DYER & FINISHER—Must be top notch Technical and Administrative Expert

LOOM FIXERS—C&K and Draper

OVERSEER—Spun Rayon Spinning. Overall Knowledge of Spinning Mill Desirable.

These positions pay attractive salaries plus expenses. Men, ages 25-45 preferred. Must be willing to remain in foreign countries one to two years. Vacations and leaves granted.

Qualified applicants should submit full information giving experience, age, marital status and references—personal interviews can be arranged.

P244, Textile World
330 West 42nd St., New York, 18, N. Y.

Well Established, Progressive Southern
TEXTILE MILL
wants equally sound, progressive
PRODUCTION MAN

The job to be filled is a tough one and calls for a highpowered, hard driving young man with limitless energy and ambition—but the opportunity is big. You must be prepared to take over quality control and production details—and to be the boss's right hand man. Submit full details of your experience.

Reply to **P-243,** Textile World, 330 West 42nd Street, New York 18, N. Y.

POSITIONS WANTED

(Continued from page 282)

SUPERINTENDENT OF narrow Fabric or woven lable plant open for position familiar with all details of manufacturing, winding, roaping, twisting, weaving and cost. With record of proven ability. PW-277, Textile World, 330 W. 42nd St., New York 18, N. Y.

POSITION AS Superintendent or Carder on cotton. Carder 4 best mills in New Bedford, Mass. for 20 years, also a fifteen million dollar fine fabric plant 8 years. Superintendent, New England mills, New York state, South, West and Mexico on everything that uses cotton from bats and ropes to India Lawns and 80" to 100" yarns daily. Details if interested. Address W. R. W., 16 Dervey St., Easthampton, Mass.

SELLING OPPORTUNITY WANTED

AUSTRALIA. AGENCIES required by established firm—textiles, china etc. Inquiries invited Vandriel, 244 Her Majesty's Arcade, Sydney, Australia.

SPECIAL SERVICE

New Fabrics Developed

Samples woven any fibers on own looms by experienced technicians. N. Y. area. SS-278, Textile World, 330 W. 42nd St., New York 18, N. Y.

SELLING AGENT WOOLENS

With excellent following among cloak and suit manufacturers, children's wear also boys' and men's wear. Can assist working up lines. Highest credentials.

RA-254, Textile World
330 West 42nd St., New York 18, N. Y.

MILL BUILDING FOR SALE

Excellent mill buildings located in North Carolina, covering 136,143 square feet, including incidental buildings; standard mill construction; main building 3 stories; all brick; sprinklered; electric lighting and power installations throughout; boiler with automatic stoker; excellent office space; railroad siding; plenty of local and skilled labor available. Village of 69 houses included, if desired. Ideal for spinning and weaving, knitting, screen printing, garment manufacturing, etc. Offered at reasonable price for occupancy August 1947.

BO-257, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED

Additional Wanted Ads on page 294

FOR SALE

COMPLETE MODERN PLANT

Weaving Fine Woolens and Worsted, with excellent lease.

BO-248, Textile World
330 West 42nd St., New York 18, N. Y.

WE BUY WE SELL WE TRADE

CHEMICALS
PHARMACEUTICALS
SOLVENTS • PIGMENTS
WAXES • BY-PRODUCTS
WASTES • RESIDUES

Other materials and supplies

CHEMICAL SERVICE CORPORATION
80A Beaver Street, New York City 5, N. Y.
HAnover 2-6970

WANT TO BUY

SPINNING PLANT

BRADFORD SYSTEM

Capacity 300 to 6000 Pounds 2/20's per week.

W-246, Textile World
330 West 42nd St., New York 18, N. Y.

FOR SALE BY OWNERS

COTTON CARDED YARN MILL

5120 Spindles, North Carolina. Set up to produce 2½'s to 4's and (or) 20's to 30's, single and ply. Plenty experienced help. Ideal labor conditions. Reason for selling, owner's health. Principals only.

BO-259, Textile World
330 West 42nd St., New York 18, N. Y.

COTTON YARN WANTED

20/1 carded on cones for knitting. Quantities. Cash.

W-242, Textile World
330 West 42nd St., New York 18, N. Y.

DYESTUFFS

Will buy your surplus and obsolete dyes and chemicals for cash.

NEW ENGLAND PRODUCTS CO.
91 Oliver St. Boston, Mass.

"SEARCHLIGHT"

IS

Opportunity Advertising

—to help you get what you want.

—to help you sell what you no longer need.

Take Advantage Of It

For Every Business Want

"THINK SEARCHLIGHT FIRST"

CASH PAID

For Capital Stock or Assets of
TEXTILE PLANT

• WANTED

By large financially powerful diversified organization wishing to add another enterprise to present holdings.

Existing Personnel Normally Retained

Box 1222
1474 B'way, N. Y. 18, N. Y.

YARNS WANTED

Wanted to purchase surplus yarns of all types — cotton, rayon, acetate, nylon, silk, wool, spuns, and blends.

W-947, Textile World
330 West 42nd St., New York 18, N. Y.

Wanted Contractor

To supply monthly allotments of 44 GRAIN SLIVER

W-164, Textile World
520 North Michigan Ave., Chicago 11, Ill.

AUCTION ADVERTISING—PAGE 293

Right in 1782... still right TODAY!

THE homely double-barreled sentiment on the engraved copperplate of Samuel Wetherill, Jr., worthy Quaker of Philadelphia, is still worth following . . . Virtue AND INDUSTRY, mark you. Incidentally, this engraving was used to print cards and labels for Samuel's goods. He was the first manufacturer of "velverets, jeans, fustians, everlastings and coatings" on a commercial scale, in America.

MLC

COMPLETE MILL UNITS

Profit Opportunities

- *A Six Set Woolen Yarn Mill
- * Fourteen set Woolen Yarn Mill
- * A Woolen Piece Goods Finishing Plant
- * 3400 Spindle Bradford System Worsted Spinning Mill
- * Six Loom Weaving Plant for Plastics or Wool—110" C&K 4 x 4 25 harness Looms, with accessory equipment.
- * Sixteen Loom Woolen and Worsted Weaving Mill with 84" C&K W-2 4 x 1 20 harness Automatic Looms, etc.
- *48 Loom Rayon Weaving Plant—44" & 46" Looms, etc.
- *20 Loom Rayon Weaving Plant—46" & 52" Looms, etc.
- * COMPLETE ENGRAVING EQUIPMENT FOR TEXTILE PRINTING CYLINDERS WITH 15 PANTOGRAPH MACHINES

MANY OTHER UNITS WITH PROFITABLE PRODUCTION POSSIBILITIES. PLEASE OUTLINE YOUR REQUIREMENTS.

SEND FOR COMPLETE DETAILED LIST OF MACHINERY FOR SALE.

1—72" C&M 2-cylinder Brushing machine
3—Button Breakers 2-48", 1-50"
2—45" Textile Finishing Machine Co. 6-bowl Calenders
2—54' x 60" D&F 2-cylinder iron Shoddy Cards with feeders
1—Lot Numerous Card Parts
1—65" C&M Dewing Machine, motor driven
1—64" P&W Doubling & Rolling-up Machine with clock
1—60" P&W Doubling, Boarding and Winding Machine
1—Set 8 Textile Vertical 48" x 23" Copper Dry Cans
1—Set 20 H.P. Butterworth 108" Drycans, dryer
1—54" x 54" Taylor Wadsworth Batch Type Waste Duster
1—18" Copper Basket Extractor
2—26" Tolhurst Extractors, belt driven
1—32" Tolhurst Copper Basket Extractor
1—48" Hercules Rubber covered Hydro-Extractor, motor driven.
1—45" Dobson & Barlow Cotton Feeder
4—40", 42" E&H Flat Folders with take-up stands
1—100" C&M Flat Folder, motor driven with hydraulic lift and roll-up stand
15—40", 80" card and Napper Grinders
8—100" & 110" C&K 4 x 4 Box Looms, 25 harness, belt driven
2—45½" C&K 4 x 1 Dobby Looms, motorized
12—54½" C&K Box 20 & 25 Harness Dobby Looms
32—54" R.S. C&K 4 x 1 Auto. Looms, 20 harness double index dobby head
110—45½" reed space Modified E Draper Looms with lacey tops 3 bank stop-motions, warm take-up, belt driven
1—48" C&K 4 x 4 box Loom, 25 harness, belt driven, friction clutch
2—74" Heavy Duck Looms, roller top.
14—82" C&K 2 x 1 automatic Looms, 8 harness cam motions, motor driven
10—92" C&K, 4 x 1 Automatic Looms, 8 Harness, Cam Motion Motor Driven
16—92" & 100" C&K 2 x 2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
200—40" Draper Model K, 20 Har Dobby Looms
2—#90 Univ. Winders
1—58" Blake Inspecting, Winding & Measuring Machine
1—61" P&W Measure & Winder
3—66" P&W 60 & 100 yd. Measuring Machine, belt driven
3—60" Measuregraph Machines
1—70" King & Gerber Tubing Machine with Veeder-Root counter
4—240 Spindle J&B 1⅞" gauge Mules
1—392 Spindle Smith 2" Gauge Mule
2—240 Spindle J&B 2" gauge Mules
1—12 Pole Smith Drum Skein Mercerizer
120—New Leland & Westinghouse ½ and 1 HP 3/60/220 V Heavy Duty Motors Also various size Rebuilt Motors
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder
1—66" Gessner 16 roll single cylinder Napper
1—72" Gessner 18 roll single cylinder Napper
1—80" Woonsocket 36 roll double acting Napper
4—80" D&F 20 roll Single and double Acting Nappers
1—30 x 30" Mezzera Wool Opener
1—76" Birch Measuring Perch, ceiling type
1—19" Tatham Rag Picker
9—40" Kitson Breaker Pickers, Finisher Pickers, and Single Process Pickers, motorized
10—100 Sp. Foster Model 12-12A-21A Tube & Cone Winders
1—42" Oisham Fearnaught Picker
2—48" C.D. Sargent Burr Pickers
1—54" Werner Single Color Printing Machine
6—52", 35½", 66", Voelker and Gessner Single and Double Bed Rotary Cloth Presses
4—50 spindle Lindsey-Hyde Adjustable Reels
5—82", 92" & 100" D&F Pin Type Reels, with creel, hack stand, neck reed, warp reel beamer with warp compressor.
1—60" C&M Single Blade Plush Shear
2—60", P&W Single Blade Woolen Shears
11—65½" P&W 2-blade Shears
1—76" C&M Double Blade Shears
2—80½" and 86" P&W Single Blade Shears
1—32" Grand Rapids 2-knife Knit Goods Slitting Machine
1—42" Grand Rapids 20-knife Slitting Machine
1—42" C&M Singer with hood
3—Lowell 2' cylinder Slashers
1—32½" D&F Jack Spool Winder
6—Smith and Furbush Spoolers, 44" drums, 48 ends, 44½" long spools with 10" head, with spool stands
1—60" C&M Single Brush Type
3—80 Spindle Hopedale band driven twisters 4½" ring, 5½" ga. Belt driven
1—180 spindle Draper Twister, 2½" ring
1—210 spindle Draper Twister, 2" ring
2—8-string Hemmer Wool Washers
1—80 Spindle Foster Tube Winder

MACHINERY LIQUIDATING COMPANY

31-33 West 42nd Street NEW YORK 18, N. Y.

MLC DOMESTIC TELEPHONE PEnnsylvania 6-8014 EXPORT MLC

WAREHOUSES: Paterson, N. J., 9 Godwin St., Tel. SHerwood 2-0373—Hawthorne, N. J., 35 4th Ave., Tel. HAwthorne 7-9661

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

COMPLETE MILLS—COTTON

1—16,000 spindle spinning and weaving mill
1—20,000 spindle spinning and weaving mill
1—5,000 spindle spinning mill

WOOLEN & WORSTED

1—6000 spindle woolen and 6000 spindle worsted mill

KNITTING PLANT

4—Supreme 18", 18 cut, 24 feeds
1—Brinton 18", 22 cut, 48 feeds
1—Katrinsky steam finishing machine. All accessories and motors

CARDING, SPINNING, WEAVING

30—Pettee Cards, 40", 10" coilers
14—H & B 40" Cards, 12" coilers
3—sets 3 cylinder D&F 48" x 48" woolen cards

SPINNING

60—F&J frames, 3½" long draft
20—Whitin 2½" ring
12—Atwood 5B Twisters, 100 spindles ea.

WINDERS

4—Universal #90 winders
2—Foster #12, skeins to cones
3—Abbot winders

PICKERS

1—Kitson 2 beater 40" single process picker
1—Saco-Lowell 40" finisher picker, 16" beater
1—D&F 48" picker consists of all 1941 parts

SLASHER

1—Johnson 3 drum rayon slasher, 54" x 23" Dia. complete
4—Lowell cotton slashers

LOOMS

40—C & K 2x1 automatic 54" width
31—C & K 2x1 automatic 52" width
11—C & K 4x1 automatic 92" width
69—Draper 40" model XP
180—Draper 60" Model E
24—Draper Modified Model D 69½"

12—ROBERT REINER Tricot Machines High speed model SW-24, new

SPECIAL OFFERING OF TENTER FRAME CLIPS

1—Van Vlaanderen 40' chain counter weight control, brass gate, SS plate.
1—Van Vlaanderen 40' chain with DL clip, SS plate, SS insert gate. 1000 of these clips.

FINISHING EQUIPMENT

1—W&J 40" frame, 50" width
1—Butterworth 30' frame 60" width
1—set 40 dry cans, 105" width
1—set 18 dry cans, 140" width
1—VV 3 roll quetsch 50"
5—Color mixing kettles
1—7 bowl calender 80"
1—3 bowl calender 50"
1—VV GL rope washer, 3 compartments, complete
1—Gessner 72" semi-decator
2—VV Button breakers, 50"
18—Hope Pantograph machines. 45" to 50".

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40 WORTH STREET NEW YORK CITY
Purchase and Sale of Used Machinery
REFINANCING • APPRAISALS • PURCHASE • SALE • LIQUIDATION OF MILL PROPERTIES

JUST WHAT YOU NEED MAY BE *here!*

200—Draper K, Auto. Looms 42" with dobby heads
36—Draper D Auto. Worsted Looms 80" with 16 har. int. heads, electric stop motion, motor driven, 28" beam heads
32—Stafford Auto. Shuttle-change Looms 54" with 25-har. dobby heads—electric stop motion—motor driven
22—Stafford Auto. Shuttle-change Looms with 16/20 har. dobby heads—6 bank stop motion—motor driven
10—Stafford 70" Cam Looms same as above
26—Draper E. Auto. Looms 42" roller tops—belt drive
6—C&K Heavy Duck Looooms 66" shuttle-change with motors
1—Cocker HS Warper and 1200 Creel—NEW 1946
14—#25 Foster Doublers—motor driven—80 spindles
6—#30 Foster Cone Winders MD 80 spindles
1—#35 Foster Cone Winder MD 80 spindles
2—Utsmann Loom Bobbin Strippers
50—Pr. 30" Adj. Steel Heads
80—Pr. 24" Allen Wood Heads
72—Section Beams 54"x26"
250—Veeder-Root Reset. Day & Night Pick Counters complete
800—KA Electrodes 46" to 84"
750M—KA Electric Drop Wires
200—Pr. 6-Bank Electrode Holders
1000—Metal Bobbin Boards
75—Loom Crank Shafts
2—30 H.P. Motors West. CS 1800—R&M 1200—both 550 volts
3—5 H.P. Motors GE 1800—550 V.
6—Loom Motors ⅓ H.P.—550 V.
24—Loom Motors 1 H.P. GE both 220 and 550 V.
30—Rebuilt Bahnson Humidifiers with 220 V. Motors
600—Waltham Day & Night Pick Counters complete—both reset. & non-reset. styles
2—Entwistle 54" Warpers
2—Chicago Waste Balers
50—Rebuilt Fibre Steel Clad Mill trucks
800—RLM Reflectors
100—Pr. 16" Mossberg Redhead Flanges
One Million Flat Steel and Wire 14" Worsted & Woolen Heddles
2000—Harness Frames 78" and 92"
5—Ton Head Motion Chain Stock 16-20-25-30 Harness
2—Ton Loom Weights 7½# each
1500—Motor Pinion Gears 12 to 30 T. with 8 and 10 Pitch
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4—New B&S 54" Yarn Reels
1—Fairbanks Roving Scale
1—Rebuilt Monroe 8 Bank Calculator

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20—3¾", 120 N. Banner Wraps, 8 step wrap, 12 step reverse plait, latest type
4—51 gauge HSL, 24 section, F. F. Leggers with single Unit attachments
1—200 lb. Venago, 8 pocket Rotary Dye Machine, 2 years old, motor driven
1—48" American Extractor, monel basket, open top, V belt driven
14—2¼", 3" diameter, S & W B-3's, 48 gauge
2—Smith Drum, 3 spindle, C S D, Skein Dye Machines, motor driven

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8 racks and 48 ends with stainless steel emulsion rolls and troughs. Excellent condition.
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1—Proctor & Schwartz Jute Picker.

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12—Universal #50 Tube Winders.
8—D&F Woolen Frames, 192 sp. 4½" gau.
8—Saco-Lowell Spinning Frames, Worsted, 228 sp. 3½" pitch, 2½" caps.
6—Saco-Lowell Cotton Frames, 204 sp. 3" gauge.
5—D&F Smith Mules, 300 & 375 Sp. 2½" gauge.
1—3-cyl. 60" x 48" dia. Woolen Card.
6—Furbush 48" x 48" Shoddy Cards.
12—Whitin 40" Cards, 12" coilers.
8—Woonsocket 8 x 4 Roving Frames.
1—D&F 48" Fearnaught Picker.
2—Cotton Pickers.
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2—Brownell Twisters.
3—H & B West Twisters, 7" gauge, 8" traverse.
6—Haskell-Dawes automatic Thread Twisters.
1—Barber-Coleman Warp Tying Machine.
1—New Crocker High Speed Warper.
2—Smith & Furbush Shredders
2—Foster #12 Winders.
25—C&K 100" & 110" Blanket Looms, md.
35—C&K 92" 4 x 1 auto. Looms, md.
36—C&K 68" Silk Looms.
2—Proctor & Schwartz 60" Feeders.
13—C&K 92" 25 harness heavy worsted looms.
6—Schaum & Uhlinger 46 space looms.
1—Davis & Furber Sample Card.
1—Hunter Heavy Duty Wool Opener.
1—Sargent 72" Feed, practically new.

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THE KEY TO SAVING TIME AND MONEY

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Immediate Delivery.
COMPLETE UNIT FOR BATTING, consisting of: four 2-cyl. Garnetts, stock conveyor, automatic feeders. Excellent condition.

2—Werner 60" Jiggs, with motor.
2—Sheridan Embossing Presses.
1—2-roll 77" Embosser with extra set rolls.
1—Fletcher 60" Extractor, motor driven.
1—2-Roll Combining Calender, 66".
1—2-Roll Doubling Machine, 74".
1—Tolhurst 60" Underslung Extractor, with 10 HP. direct motor.
2—V. V. & Tolhurst 48" Extractors.
3—Tolhurst 44" & 40" Extractors.
1—Gessner 78" Vacuum Extractor.
1—New Stainless Steel 150 gal. jacketed kettle with motor.
1—Riggs & Lombard Wool Washer.
4—Stainless Steel 60" & 66" Dye Jiggs.
1—Butt. 60'—80" Tenter Frame.
1—Morrison 60" Palmer Tenter Quetch.
4—Garnetts, 4-3-2-1 cylinders.
3—Stacks New stainless steel cans, 9 cans each, 23" dia, 66" face, complete with motor drive.
1—Sargent Raw, Stock Wool Dryer.
1—Cottage Steamer with carriage.
1—Hussong Dye Kettle.
1—Proctor & Schwartz Continuous Conveyor Dryer.
1—Van Vlaanderen 66" Palmer.
1—R.B.&F. 6-color print machine, 42", complete with dryer, rollers, mandrels, motors.
2—Klauder & Weldon Raw Stock Dyers.
1—Proctor & Schwartz 2-bowl Skein Scourer.
1—Van Vlaanderen 4-roll 60" Calendar.
1—Proctor & Schwartz 84" Revolving Stick Loop Dryer.
1—Johnson 5-can Rayon Slasher.
1—Curtis & Marble Double Acting Napping & Shearing Unit, with motors.
3—Hunter 3 & 2-cylinder B. B. Garnetts.
1—Windle 76" Doubler.
24—New England 16-carrier Braiders.

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Brinton & Supreme Knitting Machines Chinchilla machines, 60" and 66."
Elliot & Hall Flat Folders.
Pantagraph Engraving machines.
L-4 Nash Vacuum Pump with motor.
New Measuring and Tubing Machines.
Coating Machines.
New 2-roll Batchers.

AVAILABLE IMMEDIATELY FOR SALE

USED EQUIPMENT

ITEM L-238
1 ACME SILK SKEIN WINDER
72 end—Single Friction Drive 54" Skein—3" dia. Drive Flange

ITEMS 1244-1245
2 CAVAGNARO EMBOSSING MACHINES
Large Heavy Type 3 Roll Machines—But No Embossing Rolls included—Take 60" Goods

ITEM 9866
BOIL OUT MACHINES
Includes Pumps & Foxboro Temp. Clock—Also Roll Up Machine—72"

ITEM 9755
DEWING MACHINES
72"

ITEM 9841
WHITIN TAPE-CONDENSER—NEW—COTTON
Model "C"—Serial 425000—Series—40" Width

ITEM 9945
WOODEN CREEL
85¼" High—108" Long—7" Spindle—Centers for 220 Ends—3¼" Spindle—Centers for 440 Ends—Takes Paper Tubes

ITEM 10190 R
1—3 CYLINDER C. & A. TIGER
All Belt Drive from 5 H.P. Motor—66" wide

ITEM 12149
STRAIGHT TYPE CREEL—NEW
McBride—300 Engs—Suitable for 4" x 8" Roving Bobbins—Equipped with Brake & Elec. Drop Motion

ITEM 6781
GESSNER STEAM PRESS
Jumbo Type 66" Wide

ITEM B-H
RAW STOCK DRYER—SARGENT
Apron 48" wide x 37 ft. Long—Estimated Capacity about 600# per hour—overall approx. 10 ft. wide x 45 ft long

ITEM B-F
1 SEMI-DECATING MACHINE
Kettling & Braun-Yale—63" Blanket

ITEM H-R
1—36 SPINDLE FOSTER WINDER
Model 101—Equipped with 18 Spindles for 7" Paper Tubes and 18 Spindles for Wood Tubes or Wood Cones—7" Traverse Foster Butterfly Type Slub Catchers

ITEM L-P
3—184 SPINDLE COLLINS WORSTED TWISTERS
2 5/16" Ring—4" Pitch Knee Brakes but no Traps

ITEM E
RING TRAVELERS
48 Items—Unused—In Original Packages—Detail List Furnished Upon Request

Collins & Aikman Corp.
Sales & Salvage Department
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Phone—Chester 4167

AGER, Wood, Acid
AGER, Stainless Steel Acid
AGER, Tower, New
BEAMER, 60" Van Vlaanderen
BEAMER, 60" with steaming drum
BLOWER, New, Squirrel cage type
BLOWERS, R. C. 8 x 5 3/5" 350 cu. ft. per min.
BOILER, gas, Kane 3 HP.
BUTTON BREAKER, V.V. spiral 60"
BUTTON BREAKER, V.V. 50"
BELT, leather 3 ply 28" x ½" x 70" long
CALENDER, 3 roll 70" face
CALENDER, Kasterinsky 36" for knit goods
CLIPS, V.V. & W & J
DOUBLER, Windle, 60"
DRY CANS, set of 16, 72" x 23", dia. horizontal
DRY CANS, 7 Morrison 45" high pressure
DRYER, P&S Airlay
DRYER, P&S Loop
DRYER, Pin, Kenyon 5 tier
DYE BECKS, Stainless steel 4' to 20' New
DYE TUBS, 6' Wood complete motorized
DYEING MACHINES, Smith Drum Paddle type
DYEING MACHINES, Smith Drum Pocket type
DYEING MACHINE, Rochester Rotary 30" x 20". 3 pocket 20 lb. capacity
EXTRACTOR, 20" Amer. Motor
EXTRACTORS, Beam 50" & 60" BB
EXTRACTORS, Open top Tolhurst 40"
EXTRACTOR, K & G 48", rubber lined basket
FANS, Exhaust 3 blade propeller 30", 36", 48"
FLAT FOLDERS, Elliott & Hall adjustable
FULLING MACHINES, L.F. Hemmer double line.
HOISTS, Budgit 1 ton ½ ton capacity
INFRA RED units complete with blowers
INSPECTION TABLES, 47"
JIGGS, monel lined 60", 50" stainless steel
KETTLE, jacketed, tilting 70 gal. cap.
MOTORS, ¾ to 5 HP AC/DC 220 volt
PAD, 3 roll Hydraulic
PAD, 2 roll 50"
PALMER 62"
PRINT MACHINE, 10" sample or ribbon
PRINT MACHINE, 6 and 8 color 60"
PUMP, Werthington Vacuum, 18x9 complete with 25 HP motor
PUMP, Nash Hytor # H5
QUETCH, 2 roll BB 50" & 60" ball bearings
SCUTCHER, NEW
SEWING MACHINE, Merrow D3B with stand & motor.
SHEAR, Hermas, 4 knife 70" wide
SHELLS, Wooden 40"-42"-44"-48"
TENTER FRAME, Pin W&J 30"x220" wide
TENTER FRAME, Morrison 30"x60"
TUBERS—Paterson variable speed motors
TUBER, V.V. with doubling attachment
WARP COMPRESSOR CREEL
WASHERS, slop, New Stainless Steel
WOOL WASHERS, J. Hunter 6'

We are prepared to help you in disposing of or acquiring both complete plants and individual machines. Your inquiries cordially invited.

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P. O. Box 1206 Paterson 4, N. J.
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FOR SALE

8600 spindle Worsted Spinning Unit, Bradford System.
3300 spindle Worsted Spinning Unit, Bradford System.
6 NEW 200 spindle Prince Smith Spinning Frames 3½" pitch.

GARNETTING UNIT COMPLETE
2—3 cylinder Garnetts, ball bearing, double doffer.
1—Davis & Furber 6 bar Picker.
1—American 10 ft. Cone Willow Magnetic Traps, Dust Collectors, Condensers, Blowers, Dirt Traps, Complete Static Eliminator.
1—Cameron 92" Slitting Machine, variable speed.
1—Franke #33A Picker with dust extractor and motor.

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220 HARTWELL STREET • FALL RIVER, MASS.

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5—Barber-Colman High Speed Warpers and Creels, 432 ends per creel. Will produce 350 yards per minute.
5—C & K 1920 Model Duck Looms, Motor Driven with Motors. Will weave 62" duck varying from 7 to 30 ounces. Included are two cop winders.
60—Deliveries Saco-Lowell Drawing, 12" Coilers, Metallic Rolls, Motor driven with motor.
1—Saco-Pettee Drawing Frame, 6 deliveries, leather top rolls, 12" Coilers.
2—8 x 3-½ Woonsocket Speeders, 144 spindles each. Motor driven.
1—Barber-Colman, Model "K" Portable Tying-In Machine, equipped with 'B' knotter, completely rebuilt.
1—#101 Foster Winder, Double Motor driven, equipped for paper cones.
200,000—Skewers for 8 S-L Bobbins.
2—12 x 6 Whitin Slubbers, 60 spindles each, 1928 Model.
1—Cohoes Slasher, 7 & 5 foot cylinders, complete with double roll size box.
1—H & B Slasher, 7 & 5 foot cylinders, complete with double roll size box.
1—Smith Drum, 3 pocket dryer 42" x 120", Serial No. 24-358-263, 10.5 H.P., 220 Volt, with starter, switches, fittings
1—Kier 3-½ Ton, complete with motor pump, heater and pipes.

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1—Set 30 Steel Cans, 120" wide, removable journal, bucket type
1—Set 35 Steel Cans, 90" wide, removable journals, syphons
1—Set 33 Steel Cans, 128" wide, removable journals, syphons
4—St. St. Jigs, 50", with rubber beams
3—St. St. Jigs, 55", with St. St. beams
2—St. St. Jigs, 44", with rubber beams
1—St. St. Jig, 60", with rubber beams
2—St. St. Lined Jig, 60", with rubber beams
1—St. St. Lined Jig, 60", St. St. beams
1—St. St. Jig, 55", with rubber beams
1—90" Single Drum Batcher
1—50" Single Drum Batcher, 1-32" Double Drum
1—48" Simpson Batcher with cut-off
1—4 Roll Chasing Calender, 42" face
1—Screw Jack for 60" Copper Rolls
1—Lot about 790 W.&J. Clips, side opening, St. St.
1—2 Burner Gas Singer, 46"
3—Reeves Drives—2-#3 Roller Bearings, 1-#2 Plain
2—80" Jigs, St. St. Box, St. St. Beams
1—90" Padder 1-Brass—1-Rubber Roll

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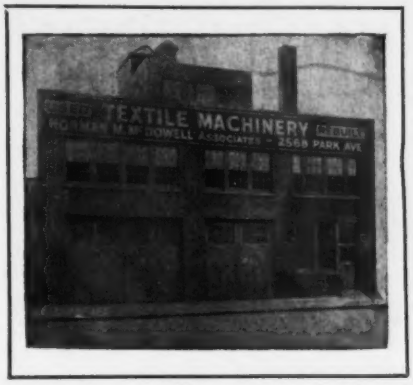

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CARDING, SPINNING AND WEAVING

2—sets 4 cylinder WOOLEN CARDS, 48" x 48", wood faced cylinders, Rub Condensers, Hopper Feeds, clothed, etc.
4—sets 3 cylinder WOOLEN CARDS, All Iron, 48" x 48", with Rub Condensers, Hopper Feeds, clothed, etc.
1—single cylinder CARD, 48" x 48", with Hopper Feed, Rub Condenser.
2—D & F All Iron, 48" x 60", 3 cylinder WOOLEN CARDS, Tape Condensers 96 ends.
1—CLEANER, with Buckley Blade Beater, spiralwhirl type.
2—CLEANERS, Vacuum, Mill type, motor driven.
2—CONDENSERS, RUB for 60" Card, with 12" ring doffers.
1—CONDENSER, Tape for 60" Card, 2 bank unit.
1—DOUBLER, 80 spindles, equipped for two (2) ends with space for three (3) additional ends, motor driven.
1—DUSTER, 60" wool, Cone cylinder, fan, etc.
66—Deliveries of DRAWING, 10"-12" coilers.
2—FEEDS, 40" and 48", automatic Hoppers with Combs for Pickers.
1—GARNETT, 3 cylinder, 48".
2—GARNETTS, 3 cylinder, 60" wide x 30" dia.
1—GARNETT, P. & S. Duplex, 4 cylinder unit, 60" wide x 30" dia. Hopper Feed, late type.
17—INTERMEDIATES, 9 x 4½, 72 and 112 spindle units.
2—JACKSPOOLERS, 48", for 60 ends pick clocks and compressor rolls.
13—NARROW FABRIC LOOMS, 6 to 54 space, 32 hook dobby.
16—NARROW FABRIC LOOMS, 14 space, cam head, equipped to make 3" webbing.
7—NARROW FABRIC LOOMS, 15' 8" frames, 22-48 space, 16 harness, 1" to 3" tapes.
65—DRAPER XP LOOMS, 36" cloth, 5 harness, motor driven.
36—DRAPER D LOOMS, 78" cloth, 16 harness, motor driven.
66—DRAPER MODEL E LOOMS, 42" cloth, 2 harness, belt driven.
90—DRAPER MODEL E LOOMS, 44" R.S., 2 harness, motor driven.
90—DRAPER MODEL E LOOMS, 28" R.S., 2 harness, belt driven.
12—DRAPER MODEL E LOOMS, 44" cloth, 4 harness, motor driven.
144—DRAPER MODEL E LOOMS, 45" R.S., 5 harness, belt driven.
90—DRAPER MODEL K LOOMS, 40" cloth, 25 harness, belt driven.
200—DRAPER MODEL K LOOMS, 42" cloth, 25 harness, belt driven.
30—DRAPER MODEL L LOOMS, 90" cloth, 2 harness, belt driven.
36—C. & K. LOOMS, 55" 4x1 automatic, 25 harness, motor driven.
150—C. & K. LOOMS, 58" B.S., 4x1 automatic, 25 harness, motor driven.
36—C. & K. 82" 4x1 automatic, 25 harness, motor driven.
10—C. & K. 92" 4x1 automatic, 12 harness, arranged for motor drive.
7—MULES, 2—240 spindles each, 2⅛" gauge, 2—288 spindles each, 2⅛" gauge, 1—300 spindles, 2" gauge, 2—480 spindles each, approx. 2" gauge.
1—J. & B. GIANT PACKAGE MULE, 297 spindles, 2⅝" gauge, 1945 model.
2—OPENERS, Creighton, motor driven units.
1—OPENER, Whitin, Spirawhirl with Buckley Blade Beater.
2—PICKERS, RAG, 20" and 30" diameter cylinders, B.B. apron feeds.
1—PICKER, BURR, 48" x 32" dia. cylinder, Feed Table and Blower.
1—REEL, DRESSING, 82", with Compressor, Beamer, etc.
6—SLUBBERS, 11x5½, 72 and 80 spindle units.
3—SLUBBERS, 12x6, 68 spindles each.
15—SPEEDERS, 7x3½—108, 120, 144, 160, 176 spindle units.
42—SPINNING FRAMES, 224 spindles each, 1 5/16" ring, 2¾" gauge, band driven spindles, motor driven.
16—SPINNING FRAMES, 208 spindles each, 1 13/16" ring, 2¾" gauge, band driven spindles, belt driven.
2—Whitin MODEL E WOOL SPINNING FRAMES, 120 spindles each, 5" gauge, 1945 model.
3—SPINNING FRAMES, 240 spindles each, 1⅝" ring, 3⅛" gauge, band driven spindles, belt driven.
36—SPINNING FRAMES, 224 spindles each, 1¾" ring, 2¾" gauge, band driven spindles, belt driven.
30—SPINNING FRAMES, 208 spindles each, 1 13/16" ring, 2¾" gauge, band driven spindles, belt driven.
84—SPINNING FRAMES, 192-204 spindles units, 2¼" ring, 3" gauge, band driven spindles, belt driven.
9—TWISTERS, Dry, 224 spindles each, 1½" ring, 2¾" gauge, band driven spindles, motor driven.
9—TWISTERS, Dry, 224 spindles each, 1¼" ring, 2¾" gauge, tape driven spindles, belt driven.
2—TWISTERS, Dry, 156 spindles each, 3½" ring, 5" gauge, tape driven spindles, belt driven.
2—TWISTERS, Fancy, 192 spindles each, 2" ring, 3" gauge, band driven spindles, arranged for motor drive.
2—TWISTERS, 96-120 spindles, 4½" ring, tape and band driven spindles, 6" traverse, motor driven units.
6—WARPERS, 85" wide on wood x 95" dia. MAGAZINE CREELS, 1624 working ends.
1—WARPER, PIN TYPE, with Beamer, Compressor, Hack Stand, Track, etc.
2—WINDERS, UNIVERSAL, MODEL #60 CF, 36 and 38 spindle machines.
6—WINDERS, FOSTER, Cone, #12 and #30, 80 spindle units, motor driven.
2—WINDERS, FOSTER, Cone #12, Skein Attachments, 60 spindles each, motor driven.
6—WINDERS, FOSTER, Tube, #25, from 1 to 5 ends, motor driven.
1—WINDER, FOSTER, Cone, #35, 80 spindles, motor driven.

DYEING AND FINISHING

1—BATCHER, 2 roll, 48" scrimp bar and brass carrying roll.
1—BRUSH, 2 roll, 54", blower and piping attachments.
1—BRUSH, 36", with two bristle brushes and two beaters.
1—CALENDER ROLLING HEAD, 48" heated roll.
1—CALENDER, Friction, 3 roll, 43½" face.
1—CALENDER, Cotton, 50" face, 3 roll unit.
1—CALENDER, Silk, Hydraulic, 60" face, 4 roll unit, pump, motor driven.
2—CALENDERS, Cotton, 80" face, 5 roll units.
1—CAN DYER, 6 copper cans, 72" x 36" dia.
1—CAN DYER, 12 tinned steel cans, 144" x 23" dia.
1—CAN DRYER, tinned copper, 23 cans, 86" x 23" dia.
1—DECATUR, Full, 72" x 24", pumps, rolling and unrolling, etc.
2—DOUBLING AND MEASURING MACHINES, 54" and 72" cloth.
2—DYERS, NET, 72" and 90" width units.
2—DRYERS, PIN, 72" width, motor driven fans.
2—DRYERS, LOOP, 82" stationary sticks, motor driven.
3—DRYERS, RAW STOCK, 350 to 900 lb. units.
6—EXTRACTORS, 32" to 60", copper baskets, belt and motor driven.
1—EXTRACTOR, VACUUM, 78", pumps, etc.
1—FOLDER, E. & H., 45", 1¼ yard folds.
1—FOLDER, 50", Bag Type, with electric knife.
1—GRINDER, Napper, 120", side discs, and Traverse Grinders.
1—INSPECTING MACHINE, 68", 2600 dial, 2 roll Batcher.
4—JIGGS, 50" stainless steel, motor driven.
2—MANGLES, 40" and 80" units, 2 roll machines.
3—MANGLES, 80" units, 3 roll machines.
1—MEASURING MACHINE, WINDLE, #3A, 66", motor driven.
3—NAPPERS, 80" and 100" wide, single acting.
1—NAPPER, 86", D.A., 36 roll, clothed complete.
2—NAPPERS, 90", D.A., 36 roll, ball bearing, late model, clothed complete.
3—NAPPERS, Knit Goods, 72", 80" and 90" wide, 20 roll units.
1—PALMER, 65" face x 61" dia. cylinder, blanket, motor driven.
1—PRESS, ROTARY STEAM, 66" wide, double bed unit.
4—SEWING MACHINES, C. & M. and DINSMORE RAILWAY, 42" to 72", motor and belt driven units.
1—SHEAR AND BRUSHING MACHINE, 44", with 4 sets of brushes and cutting parts.
1—SHEAR, Picking, 45" with 3 sets of cutting parts.
4—SHEARS, 45" to 68", Single and Double Blade.
1—SCOURING UNIT, RAW STOCK, 2 bowls, 36" width, with automatic Hopper Feed and Raw Stock Dryer to handle capacity of same.
2—SLASHERS, Cotton, 7' x 5' dia. cylinders.
1—TENTER FRAME, 40' long x 55" width, S.S.T. plates and inserts, gas burners, Batcher takeoff with Measuring Clock.
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1—D & F Fearnaught Picker, 48" wide
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1—L. & G. 32 sp. Cop Winder from skeins
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Universal No. 50 and 90 Winders—Rebuilt
1—Universal No. 180 Superconer
2—Altemus 6" Drum Spoolers
6—C. & K. Intermed. 72" Looms, 4x4 Box
6—C. & K. 82", 4x4 box, Mtr. Dr. Cash. Looms
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1—P. & W. 66" Measuring, Rolling & Doubling Machine
1—Windle 72" Fold. & Meas. Machine
1—Gessner 18 roll, 80" D.A. Napper
1—McCreary 10 roll Knit Goods Napper
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1—K. & B. Full Decater, 72"
2—Royal 600 hook Card Cutters
1—L & G Chenille Cutter
1—S.F. Yarn Sizer & Dry Cans
2—P & W 66", Plush Shears
1—P & W Mod. "B" Double Cloth Shear
1—Seargent Stock Dryer
1—Gessner 66" Jumbo Cloth Press
1—E & H Flat Yard Folder, 58"
1—Woonsocket 80", 20 roll D A Napper
1—Fletcher 60" Underneath Motor Driven extractor
1—Trojan 48" Direct Motor Driven Extractor
1—P. & S. 60" Picker (Feed)
1—C. & M. 60" Power Perch, Measuring & Rolling-up Machine
1—Airlay Warp Dryer

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30 Nylon pirn trucks.
4,000 Bruger adjustable wire swifts. 42" to 54" and 54" to 64".
80,000 New Shipping spools. 3⅜" trav., 3¼" fibre heads.
1,000 Steel quill boards.
1,000 Steel Self stacking spool racks.

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38—C&K 52" Box looms—2x1—16 Dobby individual motor driven ½ HP motor electric warp stop motions and temples fully equipped in excellent running order
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MACHINE TOOLS

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3' 11" Canedy—Otto—Radial—M.D.—1942.
4' 13" Cin.—Bickford Radial—Mtr. on arm—2' xtra hght.
24" Lei—Gif. 21 LMS—Bx. Column—1942.
24" Cin.—Bickford—Upright—Bx. Col.—1942.
16" Can.—Otto Floor & Bench—110/1/60—NEW.
21" Can.—Otto Upright—BG—M.D.—NEW.

GRINDERS

6x18 B&S #2 Surface Hand Feed—1942
6x18 Robot Surface—Auto.—1943.
#13 Brown & Sharpe Universal—Tool & Cutter—1942.

LATHES & TURRETS

16"x6' Sebastian—8 spued—G.H.—NEW.
16/20x58" Lodge & Shipley—Bel. Hd.—24 sp.—1942.

SAWS

#4B Cochran—Bly Cold.
6x6 L-W Toledo Hack—MD—NEW.
8x16 Kalamazoo-MD-Metal Band—New.

MILLING MACHINES

Van Norman #22L—Div. Hds.—Sub Hd and equipment—1942.
#2M Cinc. Plain Horiz.—Mtr. Dr.—Vert. Attach.
#2A B&S Double Overarm—Universal—Mtr. Dr.—all geared.
#2MH Cinc.—Plain Horiz.—PRT—1942 Mfg.
#3 Cinc.—Plain Horiz.—PRT—1942 Mfg.
3K K&T "Milw" Plain Horiz.
#2K K&T—Vertical—PRT—1942 Mfg.
#5H K&T Vert.—1942 Mfg.
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#00G B&S Auto.—high speed—xtras.
#0G B&S Auto.—high speed—xtras.
3½ Gridley Model R—4 spindle.
3¼ Gridley Model L—1 spindle.

SHAPERS

16" Gemco—PRT—NEW.
28" American—all geared—SPD.
7" Logan—110/1/60—Floor Type—NEW.

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DRILLS:
3' 9" Avey Sensitive Radial.
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#25 Heald Rotary Surface—MD.
6x18 Monarch Surface Hand Feed—Mtr. Spdle.

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16"x6' Lodge & Shipley—QCO—Mtr. Dr.
14"x6' Hendy—QCG—Yoke—MD.
#2 W&S Turret—Mtr. Dr.

MILLERS:
#2B B&S Plain—all geared—SPD.
#3 Ohio Universal—PRT.
#2 Cinc. Vertical—H.P.—all geared—SPD.

SHAPERS:
16" Kelley—BG—Crank—PF—C.D.
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SHEARS:
42" Whitney—Power Squaring—NEW.
36" Pexto Power—MD.

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Die Filer EL—Harvey—"Butterfly"—MD.

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1—45' Textile Tenter Frame, 80" Maximum Opening, Stainless Steel Clips.

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Supreme machines (for Jerseys and patterns), new models, and Tompkins machines, in good running condition, for export or domestic. Far below cost.

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13 FLETCHER MOTORIZED 1934 MODEL **6"** GAUGE SINGLE DECK TWISTERS

8—80 spindle machines and 5—82 spindle with 6⅛" centers, 3½" wide cork covered take-up pulleys. 4½" diameter motor pulleys, 3 HP General Electric motors with starting switches. 220 volts, 60 cycles. Machines in excellent condition.

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37,000 — 2¾"	Bakelite Head	5-B Spinner	4½" Trav.
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250,000 — 3"	Metal Head	Winding	3⅝" Trav.
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5,500 New Wire Reels, 9" Head, 7¾" Trav., 3" Bar

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1—60" Fletcher—Motorized
1—48" Troy—Motorized
1—36" Schaum & Uhlinger--Motorized

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2 SCHUBERT & SELZER
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168" Machines. All Individually Motorized. 28 Gauge—2 Bar Type. Can be used for Rayon, Cotton, Silk and Nylon.

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20 Spindles Each—Individually motorized—Flat Quill Attachments. Bunch Builders Set Up for Wool and Cotton.

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Narrow Fabric — 1900 Model, Indv. Motorized 1½ H.P., Cam Motion 16 Space, Battens, 15' 8".

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50,000 Lbs. 50/IC. P. Nat on Cones 27-28 Turns
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1—36" Motor Driven Self Balancing Hercules Extractor
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2 Woonsocket 12x6x76 spindles, 4-20" gauge roving frames
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1 Saco-Lowell No. 7 Feeder less apron
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4 sets of 3 cylinder, 60 inch Woolen Cards.
6 Spinning Mules, 1⅞ inch gauge
1 Foster #30 cone winder
3 Warp Compressor Jack Spooling Machines (32¼ inch between ends)

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1—New 72" Schofield Automatic Willow with new type six lag cylinder and feed table.

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Complete Label Loom Mill

30 Looms, Auxiliary Equipment, Building and Land, New York Office Inventory and Accounts.

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One 27 inch Tap Loom for making wool carpets and rugs, collins make, 3 harness, wire motion. Excellent condition.

L. B. FARR CO.
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Priced reasonably for delivery July-August 1947. Can be inspected in operation in South Carolina.

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42 TOMPKINS, SPRING NEEDLE MACHINES, SMALL TABLES ALL MACHINES LISTED HEREIN, ARE EQUIPPED WITH CLEARING WHEELS ON ALL FEEDS

THESE MACHINES ARE ALL RUNNING AT THE PRESENT TIME ON UNDERWEAR CLOTH

3—12	inch cylinder, 32 Gauge	5 Feeds
6—13	inch cylinder, 32 Gauge	5 Feeds
4—14	inch cylinder, 32 Gauge	5 Feeds
2—15	inch cylinder, 32 Gauge	6 Feed
2—16	inch cylinder, 32 Gauge	6 Feed
3—17	inch cylinder, 32 Gauge	6 Feed
2—18	inch cylinder, 32 Gauge	6 Feed
3—20	inch cylinder, 32 Gauge	8 Feed
1—22	inch cylinder, 32 Gauge	8 Feed
1—23	inch cylinder, 32 Gauge	8 Feed
2—14	inch cylinder, 28 Gauge	5 Feed
4—15	inch cylinder, 28 Gauge	6 Feed
3—16	inch cylinder, 28 Gauge	6 Feed
4—17	inch cylinder, 28 Gauge	6 Feed
2—18	inch cylinder, 28 Gauge	6 Feed

20 WILDMAN SPRING NEEDLE MACHINES, 28 CUT ALL MACHINES LISTED HEREIN ARE EQUIPPED WITH FURNISHING WHEELS AND DOUBLE BOBBIN RACKS

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1—12	inch machine		8 Feeds
1—13	inch machine		8 Feeds
1—13	inch machine		8 Feeds
1—14	inch machine		8 Feeds
1—14	inch machine		8 Feeds
1—14	inch machine		8 Feeds
1—15	inch machine		8 Feeds
1—15	inch machine		10 Feeds
1—16	inch machine		10 Feeds
1—16	inch machine		10 Feeds
1—17	inch machine		10 Feeds
1—17	inch machine	FBSS6	20 Feeds
1—18	inch machine	FBSS6	24 Feeds
1—18	inch machine	FBSS6	24 Feeds
1—18	inch machine	FBSS6	24 Feeds
1—19	inch machine	FBSS6	24 Feeds
1—20	inch machine		12 Feeds
1—21	inch machine		12 Feeds
1—21	inch machine		12 Feeds
1—23	inch machine		12 Feeds

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10—#30 Foster winders, motor drive, 100 spindles, paper cones, 5 H. P. motors, immediate delivery. Price: **$600.00 each**
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1—All Steel Economy Waste Baling Press, Standard Bale, 54" length, 28" width, 44" height, down-stroke, motor drive. Price: **$1,000.00.**
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32—3" ga., 204 spindles, Whitin, Band Drive. **$3.00 spindle.**
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18—H & B 40" Cards **$2750.00 each.**
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1—17" Fletcher Master Type Centrifuge, size 17M, type AST, stainless Steel lining and Bronze Basket, complete with 1 H.P. Motor—2 Phase—220/440 Volt. Will sell with or without motor.

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Curtis & Marble 120" double cylinder CARPET NAPPING MACHINE with double cutter carpet shear, steam box, polishing rolls, brushing rolls, blower system and driver.

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WANTED BOX LOOMS

4x4 Crompton & Knowles box looms, motor driven, 56 or 60" reed space, 25 harness dobby, double index with multiplier, in A-1 condition. Address

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By Warren Textile Print Works, Bondsville, Mass.

5—65 gal. S.S. Cooking Kettles, Steam Jacketed.
1756—Pin Type Tenter Clips.
1—40" Tolhurst Extractor with Copper basket.
1—40" Amer. Tool & Mach. Co. Extractor with Copper basket.
1—90½" face 4 Roll Rolling Calender, New bearings and rolls.
2—No. 4 Class G Reeves Variable Speed Drives.
1—Set of 4, 45 gallon Tin Coated Copper mixing Kettles with agitators. Steam Jacketed.
1—Hydraulic Accumulator, 3" diam. ram. Watson Stillman hydraulic pump.
1—Color Fade-Ometer #1169 LV,220 volts, 60 cy., 13 amp.
10—10 ft. intermediate sections for Winsor and Jerauld Tenter frame.
5—Stands and cross rails with screws for W&J swing Tenter Frame, 60" wide.
1—Palmer Unit 83" face with 10 ft. long pin clip Tenter and 80" quetch with steam heated cylinder and S.S. pan.
1—V. V. Ball Bearing quetch 65" face, cu. pan.
1—V. V. Ball Bearing quetch 60" face, cu. pan.
1—3 color RBF Printing Machine 60" face, not complete.
1—10 color RBF Printing Machine 40" face, not complete.
1—11 color RBF Printing Machine 42" face, frames and cylinder only.
1—70' x 60" Lincoln Swing Tenter Frame with face opener clips.
1—30 ft. x 60" V. V. Tenter Frame, Palmerette.
2—Rectangular C.I. Tanks 6' x 12' x 72" deep, Top 36" panels removable.
2—Rectangular C.I. Tanks 5' x 14' x 51" deep.
1—Rectangular C.I. Tanks 5' x 14' x 102" deep, Top 51" Panels removable.

WANTED

WANTED 20 C&K WOOLEN LOOMS

Reed space: 72" to 76"
Shuttles containing 8"x1¼" bobbins
Reply

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WANTED

BALL WINDING MACHINE

Write stating gauge, number of spindles, location, and price.

W-241, Textile World
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NARROW FABRIC PRINTING EQUIPMENT

Complete plant in operating condition consisting of:

1—6 color 14" Printing Machine
1—6 color 18" Printing Machine
both driven by 220 V 3 ph 60 cyc. motor thru shafting and belting, each complete with variable speed, rubber blanket and 3 cans.
1—Washer — 3 compartment, 3 squeeze, new stainless steel tank followed by 8 copper dry cans.
1—Steamer, 1 Forcing jack, 1 Beamer
More than 100 engraved copper rolls.

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40 BROAD DRAPER LOOMS

Fully equipped, warp stop motions, individual motor drives. Quillers and Warpers.

Plant now in operation

FS-214, Textile World

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WANTED

LABORATORY EQUIPMENT

Scott tester, Model J preferred. Give full details including accessories and price.

W-234, Textile World
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WANTED

SCOTT & WILLIAMS, 12 or 14 cut circular latch needle RIB MACHINES, 2-8", 1-9" and 2-10". Machines with 8 feeds preferred. *State Condition and Price.*

W-235, Textile World
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STEAM PRESSER

1—Hoffman Machine, 60 in. by 36 in., knit goods press, Model 5F, motor driven, with a Kane Steamer for coal.

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JUTE YARN PLANT

One of our customers abroad wants a complete plant for manufacturing jute yarns. Advise what you have available.

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WORSTED CARDS
NOBLE COMBS
also worsted machinery

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STATE OF MAINE — TEXTILE INDUSTRY

MAINE DEVELOPMENT COMMISSION, STATE HOUSE, AUGUSTA, MAINE

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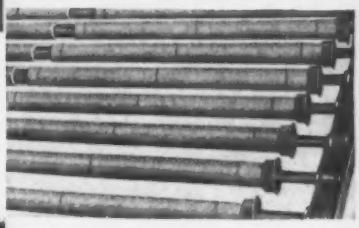

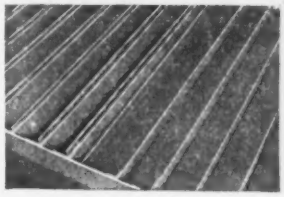

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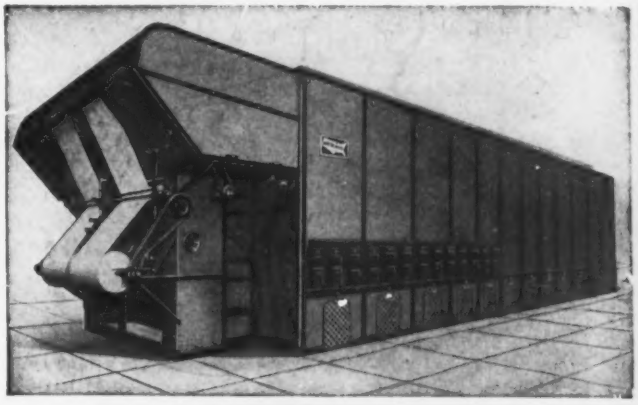

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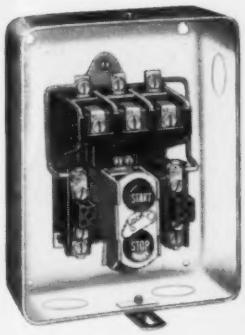
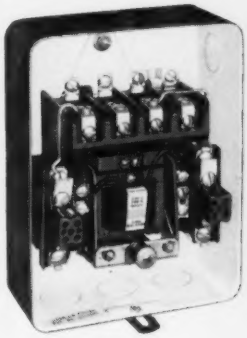
ACROSS-THE-LINE STARTERS



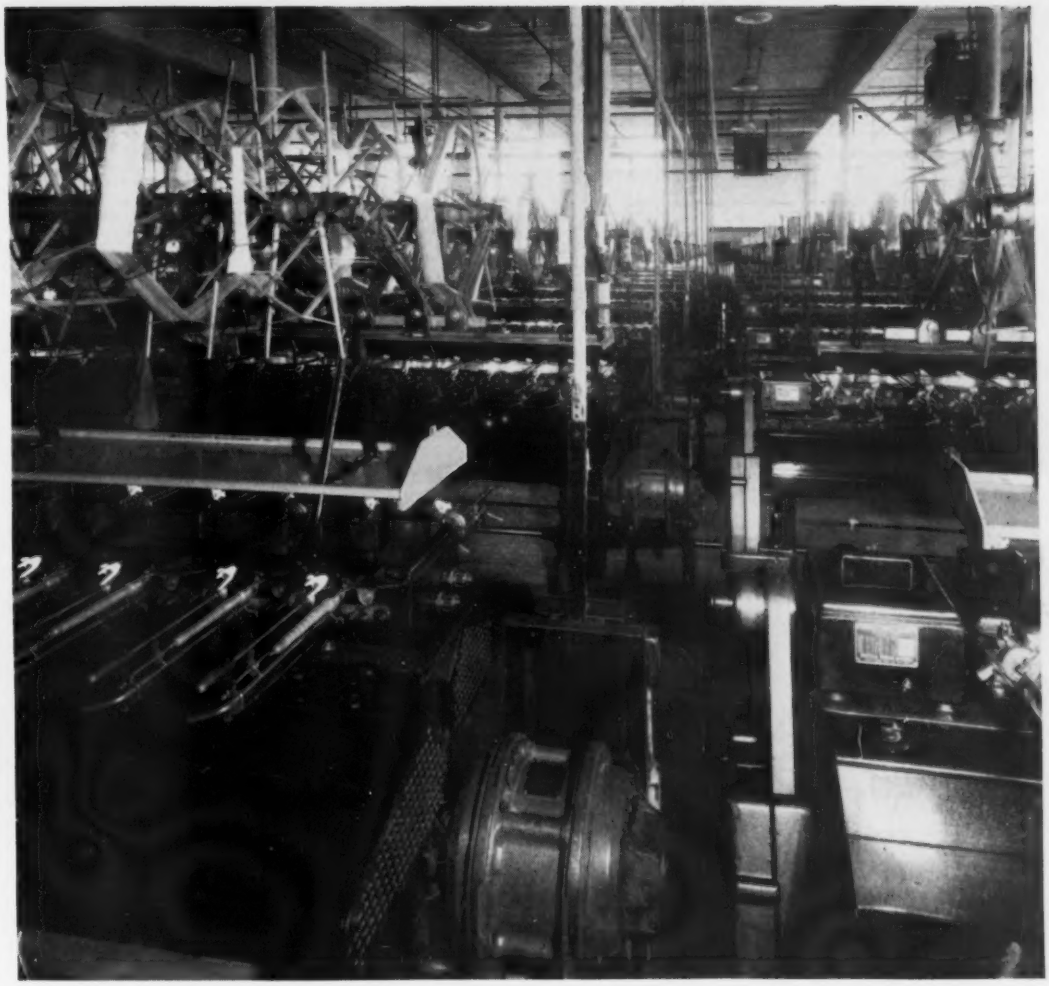
HAND OPERATED

Bulletin 609 starter for manual starting. Quick make and break switch.

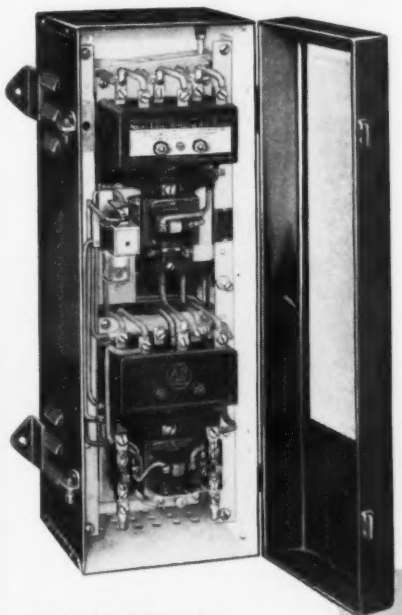


AUTOMATIC

Bulletin 709 starter for automatic starting. Overload relays protect motor.



REDUCED VOLTAGE STARTERS



VELVET-SMOOTH STARTING

Bulletin 740 Automatic resistance starter shown above. Also available as Bulletin 640 starter for manual control. Affords velvet-smooth control up to full speed.

A-B Compression Resistance Starters reduce thread breakage and prevent costly shutdowns

You can reduce thread breakage by using Allen-Bradley resistance starters . . . such as the Bulletin 640 manual starter or the Bulletin 740 automatic starter . . . for starting machines driven with squirrel cage motors.

Both of these velvet-smooth starters speed up your motors and machines, from standstill to full speed, without the jerk or jolt that breaks delicate threads.

For other textile machines, take advantage of the long, trouble free performance of Allen-Bradley solenoid controls . . . either manual or automatic. There is no contact maintenance . . . you just install them and forget them. We shall be glad to send you bulletins describing Allen-Bradley controls for textile machines.

Allen-Bradley Co., 120 W. Greenfield Ave., Milwaukee 4, Wis.

A-B Quality

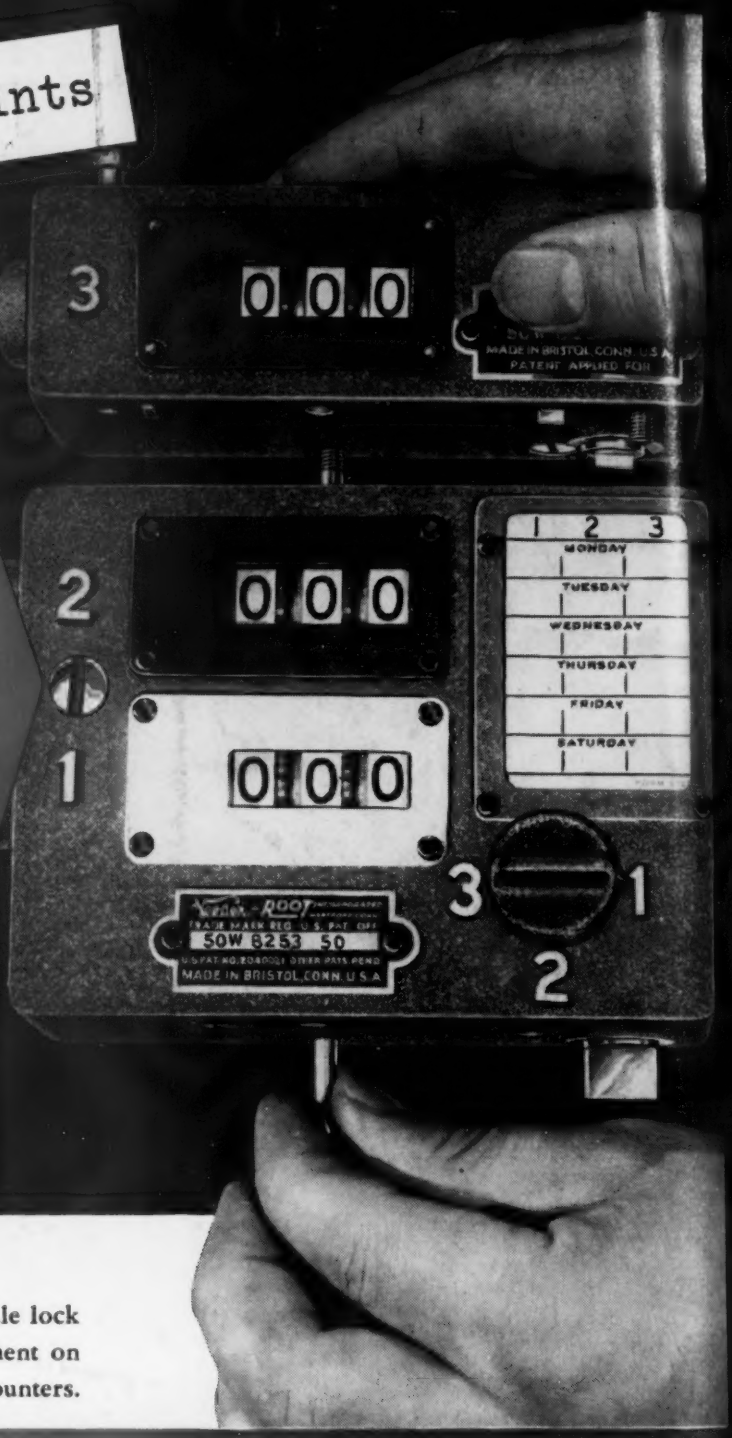
ALLEN-BRADLEY

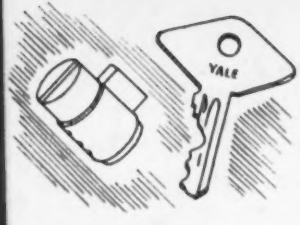
QUALITY

MOTOR CONTROLS FOR TEXTILE MILLS

Veeder-Root Vantage-Points

YALE LOCK ON THE FRONT DOOR OF EVERY VEEDER-ROOT 2-3 Pick Counter





For top protection, a stout Yale lock is supplied as standard equipment on all Veeder-Root 2-3 Pick Counters. This lock definitely says: "*No Admittance*" to any unauthorized person. Only the authorized key-holder can clear the readings by resetting.

Thus, the Veeder-Root 2-3 Pick Counter protects the accuracy of your payroll and production records.

This is another of the special advantages which are integral features of all Veeder-Root 2-3 Pick Counters. Watch this space for other important features to follow. And call in your Veeder-Root Field Engineer . . . have him show you how the sum-total of the vantage-points of Veeder-Root design *add up to your own advantage and protection.*

VEEDER-ROOT 2-3 Pick Counters

Quickly Convertible from 2 to 3-Shift Operation . . . Right in Your Mill

VEEDER-ROOT INC.

HARTFORD 2, CONN. • GREENVILLE, S. C.

OFFICES IN: Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Montreal, Buenos Aires, Montevideo, Mexico City. In England: Veeder-Root Ltd., Dickinson Works, 20 Purley Way, Croydon, Surrey. In Canada: Veeder-Root of Canada, Ltd., Montreal.